

amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



VOL. 48, No. 2

FEBRUARY 1980

FEATURED IN THIS ISSUE:

- ★ 1979 RD CONTEST RESULTS
- ★ Review: KENWOOD R1000 GENERAL COVERAGE RECEIVER
- ★ Review: YAESU FT207R SYNTHESISED 2m HAND-HELD
- ★ THE WEE WILLIE WONDER ANTENNA COUPLER
- ★ AN 80 METRE VERTICAL

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Cover Photo

AMATEUR RADIO ASSISTS RUNNERS

The "Sun" City to Surf Race held in Sydney during August 1979 attracted some 21,000 runners. Amateur Radio provided communications consisting of a radio link in the lead vehicle, numerous check-points along the route and portable man-pack links. Eric Van de Weyer VK2ZUR seen here relaying a message for a race official at Bondi Beach, the race finish.

2 metres FM via a repeater was used as the primary system with a HF network

back-up. The lead vehicle relayed up to the minute positions of the front runners. Numerous fixed check-points provided information for medical assistance to exhausted runners. This is the second year that Amateur Radio has provided communications and it has proved to be a worthwhile contribution, bringing to the attention of the public what Amateur Radio can do.

Photo: VK2ATU

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Secretary — Mr. F. Robertson-Mudie VK1NAV

Broadcasts — 3570 kHz and 2m Ch. 6 (or 7): 10.00Z.

NSW:

President — Mr. F. S. Parker VK2NFF

Secretary — Mr. T. I. Mills VK2ZTM

Broadcasts — 1825, 3595, 7145 kHz, 28.32, 52.1,

52.525, 144.1, 145.6, 148.4, Rptr. Ch. 3

3 — Gosford, Ch. 4 — Lismore, Ch. 5

5 Wollongong, Ch. 9 — Rural 11.00h

local (Evening 0930Z). Relays on 160,

80 and 10m, VHF and Repr. Ch. 3,

Ch. 5, Ch. 8, and Hunter Branch,

Mondays 0900Z on 3595 MHz, 10m,

and Ch. 3 and 5 RTTY Sunday 0300Z

7045, 14090 kHz, Ch. 52, 0930Z 3545

kHz, Ch. 52.

VIC:

President — Mr. E. J. Buggee VK3ZZN

Secretary — Mr. G. F. Atkinson VK3YFA

Broadcasts — 1840, 3600, 7135 kHz — 53.032 AM,

144.2 USB and 2m Ch. 2 (5) repeater:

10.30 local time.

Gen. Mtg. — 2nd Wed., 20.00.

QLD:

President — Mr. A. J. Aarase VK4QA

Secretary — Mr. W. L. Gielis VK4AG

Broadcasts — 1825, 3500, 7146, 14342, 21175, 28400,

kHz; 2m (Ch. 42, 48): 09.00 EST.

Gen. Mtg. — 3rd Friday.

SA:

President — Mr. I. J. Hunt VK5QX

Secretary — Mr. M. W. Wardrop VK5AWM

Broadcasts — 1820, 3550, 7095, 14175 kHz; 28.5

and 53.1 MHz, 2m (Ch. 8): 09.00

S.A.T.

Gen. Mtg. — 4th Tuesday, 19.30.

WA:

President — Mr. Ross Greenaway VK6DA.

Secretary — Mr. Peter Savage VK6NCP.

Broadcasts — 3560, 7075, 14100, 14175 kHz, 28.485,

52.290 MHz, 2 metres Ch. 2 Perth, Ch. 6

6 Wagin. Time 0130Z.

Gen. Mtg. — 3rd Tuesday.

TAS:

President — Mr. I. Nicholls VK7ZZ

Secretary — Mr. P. T. Blake VK7ZPB

Broadcasts — 7130 (AM) kHz with relays on 2m

Ch. 2 (S), Ch. 8 (N), Ch. 3 (NW),

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Broadcasts — Relay of VK5WI on 3.555 MHz and on

148.5 kHz at 2330Z. Slow move

transmission by VK8HA on 3.555 MHz

at 1000Z almost every day.

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VK1 — P.O. Box 46, Canberra, 2600.

VK2 — 14 Atchison St., Crow's Nest, 2065 (Ph. (02)

43 5795 Tues & Thurs (10.00-14.00h).

P.O. Box 123, St. Leonards, NSW 2065.

VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03)

41 5555 Weekdays 10.00-15.00h).

VK4 — G.P.O. Box 638, Brisbane, 4001.

VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at

West Thebarton Rd., Thebarton.

VK6 — G.P.O. Box N1002, Perth, 6001.

VK7 — P.O. Box 1010, Launceston, 7250.

VK8 — (Incl. with VK9), Darwin Air Club, P.O. Box

37317, Winnellie, N.T., 5789.

Slow move transmissions — most week-day evenings

around 09.30Z onwards around 3550 kHz.

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VK9, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK9NE, 388 Huntres Rd., Woodlands, W.A. 6018.

QSP —

WARC 79 IN RETROSPECT

After all those years of preparation it is now time to look back on the results of WARC 79.

Results that have given the amateur service three new high frequency bands and access to many more bands by the amateur satellite service.

These results did not just happen, they were the result of a co-ordinated and concerted effort.

After the 1959 conference, John Moyle made a few very pertinent comments in his article in AR of March 1960 about the future of amateur radio in its relationship with and preparation for ITU conferences. Those lessons of 1959 were well learnt.

Firstly, our WARC 79 ground work preparation started many years before the conference with the development of an international amateur radio position formulated by the representatives of amateur radio societies in each of the three ITU regions.

This position, having been refined, was then presented to many administrations thus indicating a consistent amateur requirement. There was also an effective international organisation providing the back-up for national societies.

In Australia there was amateur participation from the very beginning of the Australian Government preparation for WARC 79. The importance and value of membership of the national delegation cannot be over-emphasised.

In view of the complexity of the WARC agenda the ability to have two amateur representatives on the Australian delegation was a godsend; particularly as there were many simultaneous working group meetings discussing amateur matters.

It was in these working group meetings that the decisions were made and delegates had the opportunity of putting their cases in order to influence these decisions.

Every stage in the WIA preparation for WARC 79 on behalf of Australian amateurs was vitally essential: None could have been bypassed —

- The preliminary preparation;
- The complete participation in the Australian preparatory group;
- The attendance at preliminary ITU meetings particularly the special preparatory meetings of the CCIR culminating in the acceptance of two members on the Australian delegation.

Notwithstanding the heavy cost in time and money, all this has proved to have been well worthwhile in results obtained.

**D. A. WARDLAW,
Federal President.**

WIA NEWS

6 METRE BAND

The text of the latest letter from the P. and T. Department reads: "Reference is made to your letter of the 12 October and 7 November 1979 concerning use of the 50-52 MHz band in Australia by the Amateur Service.

"The use of this portion of an Australian Television band outside of normal viewing hours is presently studied following the recent decisions made at the World Administrative Radio Conference.

"It is therefore considered that the appropriate time for the discussions you have requested will be after clear guidelines are established".

This question is being pursued as urgently as possible, especially as Melbourne's TV Channel 0 will move to Channel 10 near the end of January.

INTRUDER WATCH

Alf Chandler VK3LC, the Federal Intruder Watch Co-ordinator, having relinquished this post at the end of 1979, has handed over to Graham Fuller VK3NXX and this has been confirmed. Graham's address is P.O. Box 156, Healesville, Vic. 3777.

OFFICE

As shown in January AR the Executive office news address was notified. The telephone number is (03) 598 5962. The postal address is unchanged.

1980 FEDERAL CONVENTION AGENDA ITEMS

Item 80.121 from VK5 reads:

"That the P. and T. Department be requested to include on the 'application for an amateur station licence' the right to suppress publication of the licensee's name and address from the Australian Call Book".

Item 80.122 received from VK2 reads:

"That the WIA makes representations to the Department that the authorised maximum FM deviation on the 29 MHz band be increased from ± 3 kHz to ± 7.5 kHz".

Item 80.091, also from VK2, reads:

"That higher operating requirements for new HF bands be discussed".

The Executive will also be introducing several Agenda Items mainly of a procedural nature to permit discussion, and arising, on WARC 79, IARU and continuing action from previous conventions. The 1980 Federal Convention (the 44th) will be held in Melbourne (Brighton Savoy Hotel) from 25th to 27th April 1980. Agenda Items should be sent to your Division as quickly as possible so that they can be published in AR beforehand to allow members to make comments on them to their Divisions.

AR

The print run for AR reached 8000 for the first time. A WIA NEWS Special, reporting on WARC 79, was issued as an insert into January AR.

WARC 79 DONATIONS

The accounts for 1979 show that donations towards the expenses of WARC 79 received in that year from WIA members totalled \$5049 and from non-members (including AR advertisers) \$4330. As will have been noted from the Federal accounts (see AR July, page 30) the amount brought forward, including investments which have since been encashed, was \$13,956. The magnificent response for funds means that the expenses of this very important costly representation was just about covered. The Executive wishes to acknowledge the receipt with grateful thanks of further donations from members —

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VK6ZGY	1.50
VK6WV	2.20
VK3BFQ	10.00

QSP

JANUARY AR

In the hiatus caused by holidays the quantity received of the January issue was a little short unfortunately. A few people near the end of the labels missed out in the mailing. The missing copies will be sent out as soon as possible after the printers return from the annual shut-down.

SIMPLE ANTENNA COUPLER

M. N. O'Burtil VK3WW
3 Maxwell Street, Lalor

A simple and effective antenna coupling unit for the novice and low power operator.

Like most operators I like to explore new fields and of necessity have to adapt equipment to particular needs. In this case it was portable operation from my caravan using an FT7 with a helical antenna and a Marconi 300 ohm ribbon antenna.

I soon decided that an aerial coupling unit was needed. The design, apart from electrical considerations, demanded that the unit be physically small, easy to tune and calibrate and be inexpensive. As the FT7 is a lower power rig, small tuning capacitors could be used.

I chose the Roblan single gang broadcast tuning capacitor which retails for about \$5 each. I had on hand a Toroid core, which was red and marked G 29SW479 U142. This core measures 20 mm outside diameter, 13 mm inside diameter and 6 mm deep. I think any toroid of about this size which is capable of working in the range 3 to 30 megahertz would be suitable. The Neosid type part No. 28-023-34 should be suitable also.

Winding the coil on a small toroid can be difficult, particularly when it comes to making taps every 3 turns. My method in this case was to wind on 3 turns of 20 gauge wire and leave a half inch lead on each end. I then removed this winding and straightened it out, next I cut 9 other pieces of wire of exactly the same length. Clean the enamel for half an inch on each end of each wire and carefully tin each end. Now wind 3 turns with the half inch ends pointing across the toroid. Wind another 3 turns and lightly solder one end of the first coil to the start of the second coil, continue like this until you have 30 turns wound round the toroid. Spread or compress the turns so that the coil is fairly evenly spaced around the toroid.

Now starting at the first tap, unsolder the join and twist the half inch ends together to make a good mechanical join and then resolder. Repeat this process at each tap point and leave the two ends of the coil free.

Carefully solder each tap point to the ten position switch. You will find that this method holds the coil quiet rigidly and no further mounting is required. The earth end of the coil is connected to a convenient chassis point using as short a lead as possible. The tuning capacitors are in series with the antenna and therefore are at RF potential. It is essential that they

be completely insulated from the chassis and that insulated knobs be used. A scrap of perspex sheet is a good insulator in this case. I mounted the capacitors on a piece of perspex then laid another piece under this and bolted the lot to the chassis. Of course the holes in the front plate through which the capacitor tuning shafts pass must be large enough to avoid the possibility of the shafts touching the metal plate. Likewise do not mount the capacitors too close to the front plate, the shaft is long enough to allow this.

TUNING UP

From the circuit, Fig. 1, you will note that I have included a switch to allow direct feed. This is handy for testing the effectiveness of the aerial coupling unit. Hook up the rig, SWR meter and aerial coupling unit as in Fig. 2 and tune in the signal with the aerial coupling unit switched out (direct feed). Note the S metre reading and switch the coupling unit in. Set C1 and C2 to maximum capacity and L1 to maximum inductance.

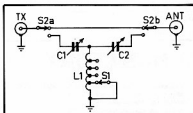


FIG. 1: Circuit diagram C1 and C2 Roblan 10-415 pF single gang, S1-10 position rotary switch, S2-DPT switch, L1 — 30 turns tapped every 3 turns on ferrite toroid, Neosid Part No. 28-023-34 or similar.

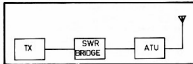
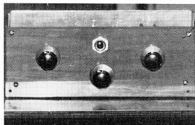


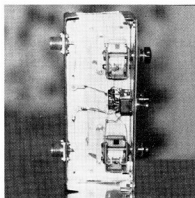
FIG. 2: Block diagram of coupler in use

Switch the taps on L1 and see if you get an increase in received signal. Now tune C1 and C2 alternately to peak the signal and note the settings of L1, C1 and C2. Switch the coupler out and apply power from the transmitter and note the SWR reading. Of course you should tune clear of the received signal a few kilohertz so that you don't cause interference. Now switch the coupler back into circuit and note the SWR reading.

At this stage I should explain that you don't always get a really good indication



The completed unit



Inside view

on received signals. If the SWR is too high or not improved from direct feed, switch the coil one tap each side of its present setting. What you are looking for is a drop in reflected power and an increase in forward power. A twin meter bridge is very useful in this situation. The meter indications are quite dramatic and show clearly when the correct tap is found. After this, alternately adjust C1 and C2 to obtain maximum forward and minimum reflected power. You should be able to achieve virtually one to one SWR on any reasonable antenna.

Once you have found the correct settings for an antenna on one band make a note of them, as they will be a good starting point for that band on any other antenna.

WHAT ABOUT HIGHER POWER?

Yes this circuit will work with higher powered rigs. Larger capacitors must be used, that is ones with greater plate spacing, and to avoid excessive heat loss a larger toroid is recommended. I am indebted to Charlie VK3BIT for bringing this circuit to my notice. It really works well, is easy and cheap to build and with low power rigs can be quite a small size which will fit in anywhere. ■



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EQUIPMENT REVIEW:

THE KENWOOD R1000 GENERAL COVERAGE RECEIVER

Ron Fisher VK30M

Trio Kenwood have a long history in the manufacture of general coverage receivers. Many hundreds of 9R59D/DE and DS's are still in use. The later R300 series did not reach the popularity of the earlier receivers. It seems now that Kenwood have produced a receiver that could lead the field for some time to come.

The R1000 is a fully solid state general coverage communications receiver with all required facilities but at the same time offering simple operation. It is obviously aimed at short wave listeners and at the growing market of people interested in overseas reception to keep up with current affairs. It is also the in-thing for amateur operators to have a general coverage receiver handy.

CIRCUITRY AND TECHNICAL DESCRIPTION

The R1000 tunes from 200 kHz to 30 MHz in thirty bands each one MHz wide. An analog dial with 10 kHz calibration divisions is supplemented with a LED digital readout with one kHz resolution. This readout is also switchable to a crystal controlled clock with facilities for preset switching on and off both the receiver and auxiliary equipment such as a cassette recorder. Selectivity is taken care of with three Murata ceramic filters. These provide for wide AM, 12 kHz, narrow AM, 6 kHz and SSB with 2.7 kHz selectivity. A first for this type of receiver is the inclusion of a noise blanker. Other features include an RF attenuator for the receiver front end, a dimmer switch for both the digital display and dial and S meter illumination and an audio tone control.

The R1000 is the first receiver of its type to get away from the Wadley Loop principle and yet still have the advantages of this type of operation. The PLL synthesizer provides a heterodyne signal to the first mixer to up-convert to 48.0 MHz. The second mixer converts to 455 kHz and this is also fed from the synthesizer. Both first and second mixers are balanced. The synthesizer output is also used to switch in appropriate band pass filters for the receiver front end. This of course eliminates the need for separate front end tuning and the need to follow main tuning with the preselector to maintain sensitivity. As if

this was not enough, the synthesizer also drives the digital readout.

The R1000 has a built-in AC power supply designed to operate from 100 to 234V. There is no provision for any in-built battery supply — but a DC connector allows for externally supplied 12 volt DC operation.

APPEARANCE AND IMPRESSIONS

Kenwood have carried through the general appearance of the 120 series transceivers to the R1000, although the front panel dimensions are slightly larger and the cabinet depth slightly less. The R1000 weighs in at 5.5 kg. Overall the appearance would have to be rated as very good and the only criticism possible is the analog dial and 'S' meter. The faces of both are completely opaque and finished in a bright silver. The calibration points are rear illuminated in bright green, but under conditions of high ambient light, reflection from the silver makes the dial and 'S' meter hard to read. With low external light both are very legible.

Controls are in general easy to use. The only exception to this is the tone control which is concentric and to the rear of the volume control. As its diameter is only slightly larger than the volume control it is hard to operate. Perhaps the next model will have a small lever extending from it to help.

The unusual carry handle seems to be either liked or completely disliked, however it does serve a useful dual purpose. As well as being a carry handle it also acts as a variable tilt angle support for the receiver when installed on a desk.

Another feature is the rear panel. This is recessed and set at an upward facing angle, and allows connections to be changed easily with the set in situ. Connections can also be routed into the back panel with the set pushed hard against a wall.



PHOTO 1: Good appearance — the R1000 and a TS520

THE R1000 IN USE

For comparative tests we set up the R1000 alongside a TS820S, with a two position coax switch to feed both from the same antenna. The antenna for low frequency reception was at first a parallel connected 80 metre dipole. It was soon obvious that this was a bit too much. Even with the RF attenuator at the 40 dB point there was quite a bit of cross modulation. We finished up with about 10 metres of wire stretched out on the floor and this gave excellent broadcast and long wave reception. Aircraft NDBs were audible at good strength over distances of 100 km or so. Quality of broadcast reception was outstanding. With a Hi-Fi speaker plugged into the extension speaker output, the high frequency response was superior to my AM/FM Hi-Fi outfit. This was of course using the wide AM mode of the R1000.

However, over to the short wave bands and naturally the first part we checked were the amateur bands. Anything audible on the 820 was equal in every way on the R1000. It was only under the most difficult QRM conditions that the superior selectivity of the 820 made a slight difference. But mark this, the difference was slight and this applied to all bands including ten. The turning rate, although somewhat faster than the TS820S was still good at

50 kHz per knob revolution and a very smooth dial drive made tuning of SSB easy. It should also be noted that SSB resolution is made considerably easier with the 2.7 kHz bandpass as compared with receivers with similar tuning rates but wider selectivity. The calibration of the digital readout proved to be quite accurate in the AM mode and a plus or minus one kilohertz error on SSB depending on the sideband selected. One of the highly rated points of the R1000 is the noise blanker, however we found its action rather disappointing. In fairness, it was no worse than the blanker in the 820S but I have never considered that one very good either. It did reduce ignition noise to some extent and appeared more effective on the higher frequencies above 20 MHz.

The quartz controlled clock was extremely accurate for the duration of our test. It is of course independent of the mains, so that even when the R1000 is run from a battery supply the clock will still operate. On a personal point, I would have preferred a 24 hour type to the 12 hour one. AM and PM indicators however overcome this to some extent.

Output to a cassette recorder is made via a 3.5 mm phone socket and audio level proved excellent for the aux. socket on my AIWA recorder. This output is at a constant level and is not affected by

the setting of either the volume or tone control.

While on the subject of the tone control, I thought that its effect was too small and more top cut would have been useful in many cases.

However, most criticism would have to be mild in view of the overall superb performance of the receiver. The R1000 is well ahead of any other comparable receiver on the market at the present time.

Overall stability proved most impressive with total drift not exceeding one kilohertz over several hours of operation.

INSTRUCTION BOOK

The receiver tested was an early sample and did not come with an instruction book and in fact it was to be several weeks before one came to hand. When it did, I was delighted until I opened it and found not one, but several instruction books all in different languages. This means that instead of one large (at first sight) book, there is one rather small book. The information contained is completely directed at a non-technical user. Apart from the block diagram and the circuit diagram there is no technical description at all.

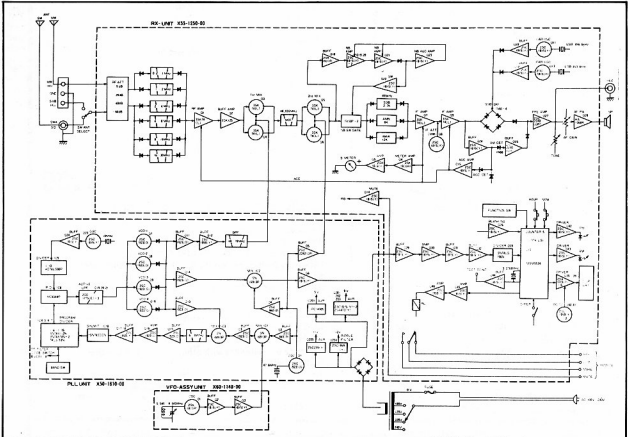
It seems a pity in this age when equipment is getting better all the time, general instruction books are steadily getting worse.



PHOTO 2: Rear view of the R1000. Note easy access to connections.

In conclusion, I am collecting all the old bottles I can find to rake up a down payment on an R1000. Our test model was supplied by VICOM International of Melbourne and all enquiries regarding price and delivery should be directed to them.

FIGURE 1 (below): Schematic diagram of the R1000. Of special interest is the PLL synthesiser unit.



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EQUIPMENT REVIEW:

THE YAESU FT-207R

Ron Fisher VK3OM

It is often said that good things come in small packages. The new Yaesu FT-207R is a hand held two metre FM transceiver and even for one used to using hand held equipment the 207R would have to be rated as very small. When it is considered just what this rig will do, the whole thing becomes quite remarkable. However, back to the beginning.



PHOTO 1: Front view of the FT207R

Two metre hand held transceivers go back quite a few years in the history of FM in Australia, but strangely cover only a very few models. Yaesu were rather late into the hand held field with the FT-202R announced a year or so ago. I am not certain if any of these were actually imported into Australia. These were six channel devices of apparently conventional electrical design with normal crystal control. Transmitter output was rated at one watt. The new FT-207R uses the same case but from there on, apart from the fact that they both operate in the two metre band there is very little in common. The FT-207R has more electronics built into its 68 x 181 x 54 mm case than almost any other mobile size package. Lets look at what it offers.

It has full microprocessor control with keyboard dial up frequency control. It covers the entire two metre band in ten kilohertz steps with a switch selected 5 kHz upshift. Four memory frequencies can be entered via the keyboard and scanning of either the four memories or the entire band is available with the scan stepping on either a busy or clear channel. Operating frequency is indicated with a LED readout and of course the usual 600 kHz offset for repeater operation can be selected with the function switch. In addition any other desired offset can be programmed into the system. Once a memory is programmed it is held even if the transceiver is switched off, for as long as the in-built nicad battery retains its charge. As the memory uses about 5 milliamps, this is limited to about 80 hours assuming no actual operation of the transceiver.

Transmitter output is rated at a generous 2.5 watts and on test actually produced just over three watts.

The FT-207R as supplied for test was complete with a nicad charger/AC adapter, external microphone/speaker, flexible antenna and adaptor to charge the battery when removed from the transceiver.

At least some of these are optional extras and it would be well to contact the distributors for all-up prices.

An interesting point is that the nicad battery is rated at 10.5 volts and the manual states that the transceiver should not be operated on a voltage in excess of exactly 12 volts. It would seem therefore that operation should not be attempted from a standard 12 volt car system which would rise to about 14 volts. Strangely, Yaesu do not have any sort of adaptor or regulator for such operation.

CIRCUIT DESCRIPTION

As could be imagined the little box contains a large number of semiconductor devices. There are in fact 31 transistors, 5 FETs, 10 ICs, 35 diodes plus 2 LEDs and a LED display. The receiver circuit is a standard double conversion with 10.7 MHz and 455 kHz IFs. However it comes as a surprise to find bipolar transistors in the RF and first mixer stages, but in practice sensitivity was first class.

The transmitter starts off at 10.7 MHz and is mixed directly with the 133.3 to 137.3 MHz output of the synthesized frequency control to produce the 144 to 148 MHz output. This same synthesized output is also injected into the receiver first mixer to convert the two metre signals to the first 10.7 MHz receive IF. Reference to the block diagram indicates the operation of the synthesizer and its control from the 4 bit microprocessor chip. An interesting point is that when the VCO is in an unlocked condition, voltage is removed from both the transmitter and receiver and the frequency display indicates 'E' for error condition. Transmitter output is switchable from the nominal 2.5 watts down to 200 mW simply by inserting a resistor in series with the voltage supply to the final and driver stages.

Diode switching is employed for transmit receive changeover which allows for normal push to talk operation with the external microphone. A microswitch is employed in the PTT switch on the transceiver which gives very positive and light control.

THE YAESU FT-207R ON AIR

This is one transceiver where it is absolutely necessary to read the instruction manual before trying to go on the air.

The transceiver was used in turn by four experienced amateurs and all found that the set had unexplained "faults". However the fault turned out to be the operators' and not of the set. In each case the manual had not been fully digested. But back to the start with a look at the controls and their functions. The top panel has the volume/on/off, squelch mode switch for simplex or repeater operation, a 3.5 mm socket for external earphone or speaker, a BNC antenna connector and a multi pin miniature connector for the external microphone speaker unit. On the front of the set is the frequency selection keyboard, the LED frequency readout, the two LEDs to indicate transmit condition and incoming receive signal. Three miniature slide switches select the 5 kHz up condition, frequency display off and keyboard lock. The two latter require some additional explanation. The display off switches the display off once a frequency has been selected after a three second delay. If a new frequency is dialled up the display operates again for three seconds. While scanning the display operates and switches off three seconds after scanning stops. The keyboard lock switch retains the dialled frequency even if a new one is dialled up either accidentally or purposely.

The remaining control, the transmitter power selector switch is mounted on the bottom of the case. Rather badly placed, but from an operational point of view but the set will not sit firmly when placed on a flat surface. Four small rubber pads would fix this and at the same time protect the table top from scratching.

All operators testing the 207R found that small fingers would have been a decided advantage. Also good eyesight is handy to read the control designations. It's not a rig to use on a dark night unless you take a torch along. First few times the transceiver was operated without the external mike/speaker and transmit quality was clean but somewhat woolly in quality. It also appeared to have excess mike gain. Plugging in the external mike unit fixed all of these problems which indicates that the user would need to set the internal mike gain to suit either the internal or the external mike — one setting will not suit both. Another interesting point with the external mike/speaker unit is that when in use, the internal mike is muted but the internal speaker isn't.

Transmit capability with the flexible antenna was about as good (or bad) as other sets tested using these antennas. The radiation efficiency of stubby antennas seems dependent on just how much metal is under them to provide a ground plane, and most of these small transceivers just are not big enough. If you want to get out even into the local repeater a better antenna is needed.

Receiver sensitivity when checked against a selection of 2m FM units was as good and in fact the mute opened easily on very weak signals that would not open the mute on some of the others. The selectivity is designed for narrow band operation and the local channel eight repeater which tends to have rather wide deviation sounded somewhat distorted, however most local simplex signals were clean.

To get full use of all the keyboard facilities takes quite a bit of practice, hence my earlier remarks on unexplained "faults". It was discovered that changing the mode switch while the set was switched off produced some odd and unexpected results. This is covered in the instruction book. We just hadn't read it. The scanning position will either scan the whole band or the four memories. It is also possible to listen on one frequency and monitor a second frequency on a one second in five basis — very handy to listen to the local repeater while waiting for a friend to show up on simplex. The display shows the operating frequency at all times, so that if a transmit repeater offset is selected, the readout will show the transmit frequency. Many synthesized transceivers with digital readout do not have this feature and continue to display the receive frequency when actually transmitting 600 kHz away.

The FT-207R was supplied with the optional NC-2 quick charger/AC adapter.

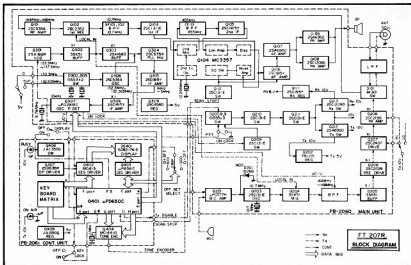


FIGURE 1 (above): Schematic diagram for the FT207R



PHOTO 2: The unit complete with speaker/microphone, NC2 quick charger/AC supply and antenna.

The transceiver plugs into this either for quick battery charge in as little as three hours, or can be used to power the transceiver for base station use. In the charge mode, the initial charging rate is 450 millamps which is automatically reduced to a pulsed 45 millamps as the state of charge increases.

INSTRUCTION MANUAL

This came as quite a surprise as it is much smaller than the usual Yaesu manual (but then so is the transceiver). Its 40 pages cover operation, circuit description and basic maintenance and alignment. A full circuit diagram is included as well as a complete parts list. Several photos show



PHOTO 3: Control functions on the unit

the position of the main components and adjustment points. The book covers all needed points and is well written.

CONCLUSIONS

This little rig is superbly constructed and finished but where does it fit into the scheme of things? Well, if you travel either interstate or overseas and you need a rig with all facilities that will fit into a small overnight bag and still room for all the other things you need to take, then the FT-207R is for you. It would also make a wonderful toy for the amateur who "has everything". Beyond this, I am not sure. If you decide to buy one, drop a note to AR and let us know what your application for this rig is.

The FT-207R and NC-2 used in our review was supplied to us by Ball Electronics of Box Hill, Victoria, to whom all enquiries of price and delivery should be directed. ■

Technical Articles
Always Needed

CALCULATION OF GREAT CIRCLE DISTANCES

C. K. Maude VK3ZCK
2 Clarendon St., Avondale Heights 3034

Over many years radio amateurs and others have tried to calculate the distance between two known points on the earth's surface using mathematical tables or slide rules. These methods can be quite time consuming and frustrating.

The basic equation used is

$$D = \arcsin(\sin(\text{lat I}) \times \sin(\text{lat II}) + \cos(\text{lat I}) \times \cos(\text{lat II}) \times \cos(\text{lon I} - \text{lon II})) \times M$$

where —
lat I is the latitude of the first point and
lon I is the longitude of the first point and
lat II is the latitude of the second point and
lon II is the longitude of the second point,
all of these being in decimal degrees,
and where M is the multiplier for kilometres, miles or nautical miles.

For those having scientific calculators, one of the programmes shown here can be used. There are programmes for fully programmable types and simple models, for reverse polish notation and for algebraic models.

The only information that is required to obtain the great circle distance between any two points is the latitude and longitude of both points in degrees, minutes and seconds. The latitudes and longitudes must first be converted to degrees and decimals, remembering that 60 seconds make one minute and 60 minutes make one degree. Answers can be calculated in kilometres, miles, or nautical miles by using the appropriate value of M as shown.

For kilometres use M = 111.12
For Miles (statute) 69.047
For Miles (nautical) 60.00

NOTE:

When longitudes are East change the sign to -ve.

When latitudes are South change sign to -ve.

If both are East or both are South no change is necessary.

Example:

Melbourne Airport: Lat 37 40 30, long 144 50 32.

Launceston Airport: Lat 41 32 45, long 147 12 49.

lat I = 37.675, lon I = 144.842.
lat II = 41.547, lon II = 147.214.
Distance: 475.72 km, 295.6 miles, 256.87 nautical miles.

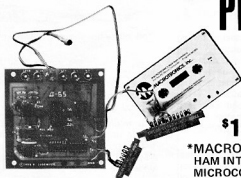
Note that if only degrees and minutes are used the accuracy is still better than 0.5 per cent for this example. ■

LISTING OF PROGRAMMES

CALCULATOR TYPE				
	RPN		Algebraic	
Step	HP45, HP35, HP55, etc.	Novus 3500, NS 4510	With store — TI59, etc.	With brackets — TI25, etc.
1	Clear all functions	Clear all functions.	Clear all functions.	Clear all functions.
2	lon I ENTER	lon I ENTER	lon I —	lon I —
3	lon II —	lon II —	lon II =	lon II =
4	COS	COS	COS X	COS X
5	lat I COS X	lat I COS X	lat I COS X	lat I COS X
6	lat II COS X	lat II COS X	lat I COS =	lat I COS =
7	lat I SIN	STO CLR	STO CLR	+ (
8	lat II SIN X	lat I SIN	lat I SIN X	lat I SIN X
9	+	lat II SIN X	lat II SIN	lat I SIN
10	ARC X COS or COS⁻¹	RCL +	= + RCL =) =
11	M X	ARC COS or COS⁻¹	ARC COS or COS⁻¹	ARC COS or COS⁻¹
12	Answer	M X	X	X
13		Answer	M = Answer	M = Answer

Calculator function and operation keys are shown in bold type.

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80 METRE VERTICAL

M. N. O'Burill VK3WW
3 Maxwell St., Lator, Vic. 3075

Here is a 23 foot antenna that is cheap, effective and easy to build. It is the answer for 80 metre operation when you can't erect a 136 foot flat-top.

The antenna is made from $\frac{3}{8}$ in. aluminium tubing for the lower section and part of the upper section, which is tuned by telescoping $\frac{1}{2}$ in. and $\frac{3}{8}$ in. tubing.

The loading coil is wound with 14 SWG enamel covered wire and is probably the hardest part of the whole project.

I mounted the antenna on a 30 foot Oregon pole and have the base of the antenna about 10 feet above the ground but there is no reason why it should not work with the base at ground level.

Using a wooden mast is an easy way of erecting a vertical, and providing it is insulated from the mast the antenna is not affected in any noticeable way.

I used a series of wooden blocks and shelf brackets to hold the vertical in place. Each block measured $4\frac{1}{2}$ in. x $2\frac{1}{2}$ in. x $\frac{3}{4}$ in. and had a $\frac{3}{4}$ in. hole positioned as shown in Fig. 1. 3 in. lengths of clear plastic tubing were then slid on to the aluminium tubing and positioned so as to insulate the antenna from the mounting blocks. Ordinary hose clips were used to hold the tubing in place once the blocks were mounted on the mast and the plastic tubing of course insulated the aluminium tubing from the hose clips.

If you have any trouble sliding the plastic on to the tubing, boil up some water and let the plastic lie in it for a few minutes; it softens very quickly.

The loading coil manufacture and mounting was the hardest part of the project, yet it seems quite simple at first. All you need is about 20 feet of 14 SWG wire, 3 pieces of perspex or similar insulating material, a coffee tin, a co-operative XYL, and lots of patience.

The aim is to finish up with a coil $4\frac{1}{2}$ in. diameter with 38 turns spaced to take up about 10 in.

My method was to carefully mark out the three pieces of perspex and then drill 38 holes in each, spaced one diameter of 14 SWG apart. Two perspex pieces measured 9 in. x 1 in. and the third 10 in. x 2 in., which provided the method of mounting to the mast. I also used two more pieces to join the two 9 in. x 1 in. pieces across the coil to stiffen the mounting. It is hard to put into words, but the photograph should get the message across.

I first close-wound the coil on a 4 in. diameter coffee tin. As soon as tension was released the coil expanded to $4\frac{1}{2}$ in. diameter.

The next job is the hardest. Starting from one end of the coil thread the three perspex spacers on to the coil. You cannot do this single-handed, so be nice to your XYL or recruit some unsuspecting local amateur to help you. An hour or so later you will have a nice coil and/or a divorce case pending—no matter, it's all in the cause of science or something.

GETTING IT ALL TOGETHER

Mount the stand-off blocks on the mast as shown in Fig. 2, being careful to keep the holes in line. Next mount the coil using the large perspex spacer as the mounting to the mast. Next slide the tubing into position and tighten the hose clips to hold it firmly in place.

Carefully bare the wire at each end of the coil and tin about $\frac{1}{2}$ in. Now wrap a couple of turns around the tubing at each end of the coil and solder the wire to a lug held in place by a self-tapping screw. Use the same method at the base of the antenna to connect to the coax socket.

TUNING

At this stage I should mention that my mast is hinged to an extended barge-board and can be easily tilted to horizontal. This is necessary as all adjustments are made by sliding the $\frac{3}{8}$ in. tubing at the top of the antenna.

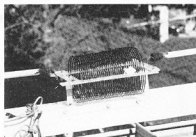
I find the best method of getting any antenna on frequency is to use a noise bridge and a general coverage receiver. If you don't have a noise bridge you can buy or build one. A good article on building one appeared in AR for July 1971, with modifications in AR October 1971.

There are two reasons for using a general coverage receiver.

One is that your first try could well have the antenna out of band limits. Also most modern transceivers are too sensitive and selective and make finding the null hard work. In any case adjustments are small, say 1 in. or 2 in. at a time, so you have to be prepared to do a lot of climbing up and down the ladder.

I selected 3.6 MHz as centre frequency and SWR checks show a bandwidth of at least 50 kHz each side of centre.

The test of any antenna is how it works under all conditions. Previously I have used a G5RV in inverted V configuration, so I ran checks against this antenna. The table shows the results—generally over longer paths (200 miles or more) the vertical won every time.



Coil close-up showing construction detail

All verticals are noisier than horizontals and this one is no exception. However, the increase in noise was not too bad, perhaps because an inverted V has some vertical properties anyway.

It would be great to have an 80 metre dipole and a vertical but this isn't on for the average suburban block, so I think this vertical is quite an efficient antenna under the circumstances.

MULTI-BAND AS WELL

After satisfying myself that the vertical was working well on 80m I tried loading it on other HF bands.

I fed it through an aerial coupling unit (Willy Willy's Wonder, AR January 1977) and found I could load it quite well on 40m, 20m and 10m.

Of course on these extra bands it does not perform as well as a full size dipole, but is suitable as an emergency antenna capable of working all VK and ZL at least.

All things considered, this antenna is cheap, fairly easy to build and tune and performs well on 80m. With a little imagination it could be made to fit most houses.

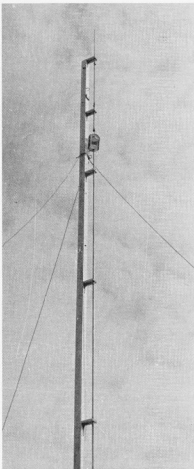
No radials were used but an earth spike at the base is essential. My vertical is fed with 70 ohm coax because I had some available. It would probably perform better with 50 ohm and even better with a 2:1 RF transformer, so there is room for improvement if you have the bits and pieces available.

All soldered connections were covered with DENSOL 510 tape to provide weather-proofing. This tape is covered in wax, which enables moulding by hand once it is wrapped around the tubing.

This article is written mainly for the amateur with limited space, and it is hoped that it will enable more amateurs to enjoy 80m operation. ■

TEST TABLE

Distance	G5RV	Vertical
2-10 NM	0	+ 10 dB
Melbourne-Sydney	0	+ 2 S points
Melbourne-ZL2	0	+ 2 S points
Melbourne-Wagga	0	+ 1 S point
Melbourne-Adelaide	0	+ 1 S point
Melbourne-Hobart	0	No Difference
20-200 NM	0	+ 1 S point
10-20 NM	0	+ 2 S points



The 80 metre vertical

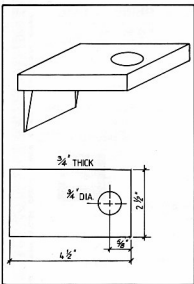


FIG. 1: Wooden blocks stand off construction.

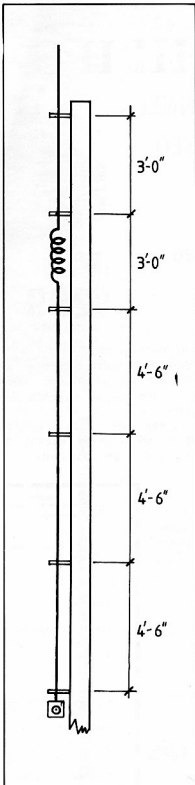


FIG. 2: Stand off mounting positions

C.A.R.E.

(Community Amateur Radio Events)

In times of emergency amateurs often provide the only communication link. One recent occasion was on February 15, 1979, when the US Embassy in Teheran was occupied by Iranian nationals. Charles (Chuck) Watter W4RHE had been keeping in touch with his sister and her family in Teheran via a local amateur. After the US Embassy's communication facilities were shut down Charles became the official relay station for the State Department in Washington and kept the link operating until the Iranian amateur station was closed down. The information passed via the link gave the US its only information in relation to the safety of its embassy staff during the initial stages of the occupation.

Letters of thanks from the White House and the House of Representatives were sent to Charles.

Charles, who from 1960 to 1962 held the call VK8TB, has been licensed for 31 years and welcomes VK QSOs and VK visitors.



Charles W4RHE (left) presented with letter by Congressman Nelson

THE WHITE HOUSE
WASHINGTON

June 22, 1979

To Charles Watters

I want to express my appreciation for your valuable work in maintaining communications between the United States Government and Iran during the recent upheaval last winter.

Your help was of great benefit to the personnel of our Embassy and the interests of our Government.

Sincerely,

Jimmy Carter

Mr. Charles H. Watters
Post Office Box 8401
Orlando, Florida 32806

Letter signed personally by President Jimmy Carter

THE PHILIPS FM321

A 70CM 40 CHANNEL
FULLY SYNTHESISED
AMATEUR RIG

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With these features ● 40 synthesised channels with electronic channel change and LED readout. ● Channel selection up or down from front panel or hand microphone. ● A LED each for power on, transmit and receive. ● 5watt RF and 1watt audio power. ● Combined signal strength and RF power meter. ● Single or two frequency simplex operation on any of the 40 channels. ● Instant selection of these modes plus any one nominated repeater channel. ● 5MHz TX/RX separation on repeater mode. ● PL259 antenna socket. ● 6 pole crystal filter combination for improved selectivity. ● High sensitivity.

and this performance

Typical data at 22°C 13.8V

Frequency Range: TX 433.025MHz to 434.000MHz

438.025MHz to 439.000MHz

RX 438.025MHz to 439.000MHz

Frequency Stability: Better than 6ppm 0°C to +60°C

Supply Voltage: 11 to 16.2Volts—Ve earth

TRANSMITTER

Power Output: 5Watts

Spurious Output: -63db(out of band)

Audio Response: 6db/octave pre-emphasis

300Hz to 2KHz

RECEIVER

Audio Output: 1.0Watt at 10% THD into 8Ω

Selectivity: 50db at ±25KHz

Sensitivity: 0.3uVpd (12db SINAD)



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Please send me an FM321
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OR

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EXPIRY DATE

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* Add \$4.00 for packing and postage

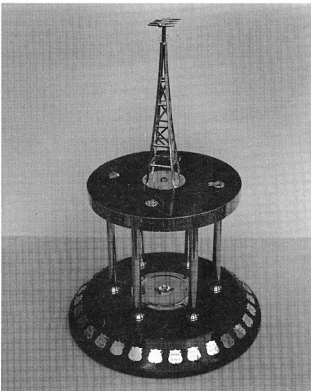


PHOTO 1: The much sought-after RD Contest Trophy — a reminder of those amateurs who became Silent Keys during World War II. (See page 27 for last year's results.)

QSP

10 GHz DX RECORD

According to Ham Radio of Oct. '79 a new 3 cm band record was set on 27th July by I4CIV/7 and 12FZD/2. The distance of 633 km was from a mountain top NE of Milan by the latter station to Testa del Gargano on the Adriatic Coast by the latter. Both used Gunplexers and 1m dish antennas. ■

ALL AIRWAVES ARE NOT FREE

An article, so entitled, appeared in Oct. '79 QST and gives much food for thought. It is too lengthy to quote in full but deals with MDS (Multi-Point Distribution Service) systems in the 2.15 GHz region which are over-the-air relay systems for premium movies and other specialised TV fare received on a monthly rental basis and providing receiving system equipment (typically around \$60 per installation) and interception of geostationary (common carrier programmed) satellites channels. ■

PHILATELISTS' NOTE

West Germany has issued a 60 pfennig WARC commemorative postage stamp which shows the front panel of a Collins KWM-2 transceiver tuned to the 21 MHz CW band. Plans for a separate amateur radio commemorative stamp have been dropped resulting from this issue. Ham Radio, Oct. '79. ■

HISTORIC "JUNK"

In his editorial to Oct. '79 Ham Radio Jim Fisk WHIR bemoaned his inability to attend an auction recently of surplus electronic equipment dating back to the 1920s built into custom-made wooden cases which were then in fashion. Most of the buyers, he said, were antique dealers who were interested only in the finely crafted cabinets — the priceless radio equipment inside was destined for the trash heap. He quoted another earlier opportunity missed for acquiring old gear for his collection from a sale of a local deceased amateur's collection of "junk" which filled four large warehouses. He recommends amateurs to talk to their heirs and clue them in as to what items, if any, belong in a museum. Put the details down in the will and give your executor the names of trusted amateur friends to help dispose of more modern gear at a fair market value as the equipment's value would be meaningless to most executors. ■

MARITIME EMERGENCY

The following is pieced together from articles in the Toowoomba Chronicle of 11th, 14th and 29th December, received from Steve St. George VK4SE, all acknowledged with thanks. Stephan Zadkovich with his wife Jenny VK4NXV/MM and his brother Gary set sail from Brisbane aboard the 32 ft. Toowoomba-built steel sloop "White Wave" in August '79 on a round-the-world trip. Daily skeds were kept between VK4SE and the sloop which ran into cyclone Albert some 500 miles south-east of Rodrigues Island in the Indian Ocean. Before the storm reached its peak on 3rd December, VK4SE received a relayed position faintly from the sloop and several other amateurs in Australia, South Africa and Mauritius joined in a listening watch. VK4SE also reported the details to "Marine Operations" in Canberra. The sloop was rolled four times during the storm. The life raft went overboard on the first roll, the mast went in the second capsized next day, but throughout the radio was saved and when dried out, Jenny was able to transmit morale for a contact with a ZS station on 8th December using a makeshift antenna rigged up on 6th December. By that time the batteries were nearly flat, they had no fuel and no mast but were making two knots under jury rig. The ZS authorities were ready to mount a search and rescue operation but before they could act, clearance was required from Canberra. However the Mauritian authorities did act and the sloop made harbour for shipment to Toowoomba for repairs. All the occupants were safe and had returned home. ■

EMPLOYMENT OPPORTUNITY

- Brisbane -

The Company: a young energetic business with high growth possibilities in the area of Amateur Radio, Micro Computers and Commercial test and communications equipment.

POSITION 1 - Service Technician.

A qualified technician to manage our service centre. Previous experience in communications equipment and digital technology essential. A pre-requisite is an Amateur Radio licence and some sales experience an advantage.

POSITION 2 - Sales Engineer

To handle our quality range of products (as above). The market area includes government and commercial bodies. A pre-requisite is an Amateur Radio licence or willingness to obtain one at the earliest opportunity. Some service experience would be an advantage. The position involves some travel.

Salary & conditions negotiable.

APPLICATIONS

Initial applications should be in writing stating work experience, qualifications and other relevant details.

Mark Confidential
Att: Mr. Brian Beamish

CW ELECTRONICS

P.O. BOX 274, SUNNYBANK QLD 4109

HOORAY FOR

(NONE OF THE ABOVE)!

Submitted by
Bruce Saxton VK3NSB
77 Edithvale Road, Edithvale, 3196

This concoction is dedicated to all those hard working amateurs who so generously give of their spare time to present courses and lectures to aspiring students of NAACP and AOCP.

The idea was taken from the Educational Magazine, Vol. 36, No. 5, 1979, titled, Hooray for (None of the above).

The time is set as some time in the future.

I wasn't aware of the awesome changes sweeping through our educational system until I visited the Henry Radio School the other day and had a little chat with its Principal, Dr. Homer P. Dantic. "How are you?" inquired Dr. Dantic, shaking my hand. "(A) Just fine, (B) not too bad, (S) so-so, (D) not too hot, (E) at death's door?" "(A) thank you," I said, "and you?" "(B)" said Dr. Dantic, "But let me tell you I certainly was (D) last month when our Novice grade students scored in the thirty second percentile of the seventh stanine at the Novice grade level on the Standard Webley-Vickers Radio Theory Test."

"Good grief," I cried, "What an indictment of your educational methods. Did you discover a solution?" "Well it was clearly a multiple choice problem," said Dr. Dantic. "Tell me, do you think we should have (A) purchased one of the 1156 other sample tests now on the market, with the hope that there would be at least one test that would make our faculty look good; (B) attempted to attract a better calibre of student through a recruitment programme; (C) drastically revised our teaching methodology; (D) burned down the school; (E) none of the above?" "Let's see," I said. "I think . . ." "Sorry, your time is up," said Dr. Dantic, clicking his stop watch. "Actually, after much thought, we took the plunge and decided to (C)." "You mean you have drastically revised your methodology for teaching Radio Theory?" I asked. "No, we have drastically revised our methodology for teaching our students how to score well in multiple-choice tests," said Dr. Dantic.

"Would you like to see one of our new dynamic instructional modules in action?" I said I would, indeed. It was a most enlightening experience. The module we visited contained 32 students and Miss Ann Tenna, an enthusiastic young teacher. As we entered the room Miss Tenna was reviewing a homework assignment. "Who can tell me the name of the assistant who polished Marconi's ebony rod with catskin?" she asked. "Adrian?" "The name," said Adrian, "is (B)." "Very good, Adrian," said Miss Tenna. "Now, Peter, please tell the class the age of the pilot of the first communication satellite." "It is (D)," said Peter. "Wrong, wrong, wrong," shouted the class, "it is (E)."

Miss Tenna regained control and continued with the probing questions. "What is the square root of 15 712?" (Answer (C)) "Does Mr. Diode still work for Telecom?" (Answer (A).) And so the lesson continued.

"I didn't know you taught the historical aspect of Radio Theory," I remarked to Dr. Dantic. "We don't," he replied. "Then how can Miss Tenna test the students on it?" I asked. "She's not testing on that," explained Dr. Dantic, "She's testing their ability to take tests."

Well, I wish you could have seen the crackjack way in which those students performed. When Miss Tenna cried "Go!", all the students had their papers flipped over in a millisecond and their pencils flashing away as they ruled the little marks on the answer sheet. By the time Miss Tenna blew her whistle Peter was only half way down the page. Miss Tenna looked at him and sighed "How often do I have to tell you, Peter?" she admonished, "When you see that you won't have time to finish a test, simply slash a vertical line down the page, hitting as many boxes as possible. If each question has five alternative answers, you will thereby increase your score by an average of 20 per cent. Adrian will you read your answers to the class?" "Yes," said Adrian, "(B), (B), (B), (B), (B) . . ." "I take it you answered (B) to every question," interrupted Miss Tenna, "Can you tell us why?" "Simple," said Adrian, "I recognised the format of the Hispano-Suza Multiphasic Norm-Referenced Scholastic Evaluation Test. I immediately recalled that the computer readouts we studied last week indicated (B) was the correct answer 28.8 per cent of the time in Hispano-Suza multiphasic, as compared to 16.9 per cent for (A), 18.3 per cent for (C), 19.7 per cent for (D) and only 16.3 per cent for (E)." "Very good," said a beaming Miss Tenna. "Class dismissed."

Miss Tenna's admiration for Adrian was echoed by Dr. Dantic when we were out in the corridor. "Adrian is the brightest student we've had here at Henry Radio School in years," he said. "He has already single handed raised our faculty performance record 1.3 per centiles on the Standard Webley-Vickers Intermediate Placement Test. And thanks to his score of 799 on the Academic Aptitude test, he will move directly to AOCP classes next year." "Most impressive," I said. "Yes," he said, "We are predicting a brilliant academic future for this young chap as he seeks the answers to those all-important questions." "In which facet of amateur radio would he specialise?" I asked. "Multiple-choice testing, of course," he replied.

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APPROVE RE-GRADING TO PENSIONER STATUS - PLEASE
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WESTERN ZONE CONVENTION

Jack Thomas VK3NTR
1 Stevens Crescent, Ararat 3377

The Annual Convention of the Western Zone of the Wireless Institute, Victorian Division, was held at Halls Gap on the 10th and 11th of November 1979 and was a great success. The Saturday venue was held with a dinner at the Mountain Grand Guest House with 94 attending. Guest of honour was the President of the Victorian Division, Mr. Eric Bugbee VK3ZZN and his lovely wife, with many visitors from many parts of Victoria and interstate visitors.

Sundays venue was slightly marred by an opening of the heavens but this was only a minor setback as the proceedings were carried out in the Halls Gap Hall. Forty-six ladies plus a couple of wandering QMs took advantage of the day to have a memorable sightseeing tour of the Halls Gap area.

Trade exhibits were excellent and many an amateur left with an empty pocket. Imark, Vicom, Wecam, Hamilton Electronics and the Moorabbin Club contributed to the draining of funds and provided excellent displays of various gear.

The convention was a unanimous success and many people have pledged to return to the Halls Gap area again, independent of any conventions. I wish to thank sincerely all those who attended and those whose help effort made the convention worthwhile. Special thanks to Sylvia Rose and her son and the trophy donors for the various events. We hope those who attended left satisfied and those who could not attend can make it to our next convention.



PHOTO 1: Jack VK3NTR congratulates Gordon VK3NO (right) who won the lucky entrance, Brian VK3ZBS looks on.



PHOTO 2: Laurie VK3NDL (c) presents Jack VK3NTR with an award.

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TS520S YG3395 Kenwood — \$57.00
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HK702 Deluxe Key with marble base — \$41.00
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5Y/2m 5el 2m, 7.8 dBd gain, length 1.6 m — \$43.00
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10Y/2m 10el 2 m, 11.4 dBd gain, length 4.4 m — \$84.00
10XY/2m 10el 2m, cross yagi, 11.3 dBd — \$114.00
D8/70cm Twin 8el, 70 cm, 12.3 dBd, 1.1 m — \$64.00
PBM 18/70 18 el, 70 cm, 14.9 dBd, 2.8 m — \$96.00
MBM 48/70 48el, 70 cm, 15.7 dBd, 1.83 m — \$83.00
MBM 88/70 88el, 70cm, 18.5 dBd, 3.98 m — \$105.00
PMH/2C Phasing harness — \$20.00
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204BA 4 el monopole for 20 m — \$259.00
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TS120V Solid state 10W — p.o.a.
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R-1000 Communications Receiver — \$498.00

Monitor Receivers

747 Vicom Aircraft Scanner — \$199.00
210 Bearcat 210, scanner — \$469.00
HF12 VHF cockpit, 12 channels — \$149.00

Coaxial Relays

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CS201 2 position, commercial quality — \$23.00
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RF660 Phasing type, 6dB gain, dc — \$109.00
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ICOM

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IC551 6m 10 watts — \$799
IC551D 6m 100 watts — \$850
IC255A 2m Digital — \$425
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QUALITY ANTENNA ROTATORS



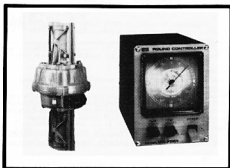
DAIWA

Typical operating characteristics:

	DR7500S (medium duty)	DR7600S (heavy duty)
Power consumption	40VA	40VA
Motor	24V split phase	24V split phase
Rotation time (approx)	50 sec	64 sec
Rotating torque	500kg/cm	600kg/cm
Braking Torque	2000kg/cm	4000kg/cm
Vertical load	200 kg	200 kg
Weight	4.5 kg	4.6 kg
Cable	6 core	6 core
PRICE: (cable \$1 per m)	\$189.00	\$259.00

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NEW IMPROVED MODEL FEATURING STACKS OF EXTRA TRICKS!

The new Theta 7000E has all the features of the popular 0-7000, plus a lot more! Now every Amateur can enjoy the visual display of CW, RTTY, and ASCII in both transmit and receive modes. Just connect the TONO to any TV set via the antenna terminals or to a page printer from the parallel port provided. Bring up your CW speed in receiving or sending by either watching receiver-sent or from recorded cassettes.

SOME OF THE OUTSTANDING FEATURES:

THETA 7000E COMMUNICATIONS COMPUTER

Due to the most up-to-date computer technology, just one piece of equipment can now handle both transmitting and receiving in CW, RTTY and ASCII.

VHF and Composite video output provided:

Both home TV set and video monitor outputs are provided for display purposes.

Printer Interface.

Cenronics Compatible interface enables easy connection of a low-cost dot printer for hard copies.

Wide range of transmitting and receiving speeds.

10 communication speeds for transmitting (with automatic CW speed adjustment on receive) and 8 communication speeds for transmitting and receiving in RTTY and ASCII. The multiple speed package makes the Theta 7000E ideal for Amateur, business and commercial use.

Built-in demodulator for high performance.

Three-step shift (either 170Hz, 425Hz, 850Hz) can be obtained in High Tone and Low Tone by the switch. Manual adjustment is available by FINE TUNING control.

Crystal controlled modulator.

A transceiver without AFSK function can transmit in RTTY mode by utilising the high stability crystal-controlled modulator controlled by the computer.

Convenient ASCII key arrangement.

The keyboard layout is the same as a regular typewriter and automatic insertion of LTR/PG code makes operation a breeze.

Large capacity display memory.

The two-page display memory contains 32 characters x 16 lines per page. Page selection is operated via the keyboard.

Split-screen.

With a keyboard command, the same page can be divided in two; the upper half for transmit and the lower half for receive. Sentences can be edited whilst receiving.

Automatic Transmit/Receive switch.

The transmit/receive switch is controlled by the microprocessor. (Manual operation is also available). Built-in remote control key function controls the transmit/receive switch of the transceiver.

Anti-noise circuit.

A new anti-noise circuit prevents garbled messages when there is no signal.

Battery backed-up memory

Data in the battery backed-up memory is retained when the external power source is removed. The Theta-7000E has provision for 64 characters x 7 channels in the non-volatile memory. Data in this memory can be repeated 1-9 times from a keyboard instruction. Every channel can read out continuously. The channel number in use is displayed on the screen.

SEND function

The SEND function sends the whole data displayed on the screen, including the stored data in channels, with an instruction from the keyboard. The message can be stopped and easily restarted.

Buffer memory.

A 53-character buffer-memory is displayed on the 17th and 18th lines on the screen. The characters move to the left ending one by one as soon as they are transmitted. Data in the channels can be displayed in the buffer.

Rub out function.

Mistakes can be erased whilst the information is still in the buffer memory. If the mistake has already been sent correcting code will be transmitted.

Simultaneous access of the memory.

Whilst receiving, it is possible to write into the channel memory and the buffer memory from the keyboard. When sending from the channel memory or the screen it is possible to write into the buffer memory.

Pre-loading function.

The buffer memory can momentarily store data and release it on an instruction from the keyboard.

Channel No., Page No., and Case No.

Channel No., Page No., and Case (FG/LTR) in RTTY are displayed in the 17th line of the screen.

CR (Carriage return)/LF (line feed) cancel function.

When receiving CR or LF, they are replaced by = (equal) and (underline) respectively for effective use of the screen.

Cursor control function.

Full cursor control (up/down — left/right) is available from the keyboard.

WORD MODE operation.

Characters can be transmitted by word groupings.

Automatic CR/LF

While sending, CR/LF are automatically inserted once every 72 (60 or 80) characters.

Echo function.

With a keyboard instruction, received data can be read and sent out at the same time. A cassette tape can be used as the source data.

WORD-WRAP-AROUND function.

In receive mode word-wrap-around prevents the last word of line from splitting in two.

Transmit/receive in ASCII mode in RTTY.

On instruction from the keyboard, the same AFSK signals as used in RTTY are transmitted in ASCII mode.

CW identification function.

Keyboard controlled CW identification is available if required.

MARK-AND-BREAK (SPACE-AND-BREAK) system.

Either mark or space tone can be used to copy RTTY.

Monitor circuit.

A built-in monitor circuit with an automatic transmit/receive switch enables checking of the transmitting and receiving state. In receive mode it is possible to check the output of the band filter, the space filter and AGC amplifier prior to the filters.

CW practice function.

The Theta-7000E reads data from the key and displays the characters on the screen.

Variable CW weights.

For CW transmission, weights (ratio of dot to dash) can be changed within the limits of 1.3-1.6.

Cross-pattern checking output terminal.

Provision has been made for attachment of an oscilloscope to aid tuning. This supplements the tuning LED and audio monitor provided in the system.

Log-computer output provided.

The Theta-7000E has an output terminal for connection to a log-keeping computer.

Test message function.

"RY" and "QBF" test messages can be repeated with this function.

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AUSTRALIA****STILL ONLY \$299****SYNTHESISED***** IDEAL FOR MOBILE**

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SIMPLY THE BEST!**Typical Technical Characteristics**

General (Australian Model). Number of semiconductors: Transistors 41, FET 7, IC 13, Diode 33 (Except Main Board). Frequency Coverage: 146-148 MHz. Antenna Impedance: 50 Ohms unbalanced. Power Supply Requirements: DC 13.8V \pm 15% Negative Ground 2.5 A Max. Current Drain. Transmitting: Approx. 2.0A. Receiving: At Max. Audio: Approx 0.7 A. Squelched: Approx. 0.4A. Dimensions: 58mm(H) x 156mm(W) x 218mm(D). Net Weight: 1.9 Kg. Channels Installed: R1-8, 40, 50, 51. Transmissions: Transmitting Frequency: 22 Channels in the 2m Band. Programmable by a diode matrix for any channels on 25KHz spacing. Emission Mode: 16F3. Output Power: 10W. Max. Frequency Deviation: 5KHz. Modulation System: Variable

resistance phase modulation. Spurious Emission: More than 60dB below carrier. Microphone Impedance: 600 Ohms. Input level: 10mV typical. Dynamic or optional Electret condenser microphone. **Reception:** Receiving Frequency: 22 Channels in 2m Band. Modulation Acceptance: 16F3. Receiving System: Double super heterodyne. Intermediate Frequency: First IF 10.7MHz. Second IF 455KHz. Sensitivity: Less than 0.5uV for 20dB Noise quieting. More than 30dB S+N+D at 1 uV. Squelch Sensitivity: Less than 0.3uV. Spurious Response Rejection Ratio: More than 60dB. Selectivity: \pm 7.5KHz at the -6dB point. \pm 15KHz at the -60dB point. Audio Output Power: More than 1 Watt. Audio Output Impedance: 8 Ohms.

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AMATEUR SATELLITES

R. C. Arnold VK3ZBB

OSCAR 7

Efforts to maintain AMSAT OSCAR 7 on its old schedule of operation have been successful in recent months. For those who may not remember, Mode A operates on odd days of the year with Mode B on the even days. Wednesday is experimental day on Mode X.

The tentative launch date of the British UOSAT Amateur Satellite is 13th September, 1981.

Probably the most "up to the minute" and comprehensive notes on satellite activity are found in the newsletter of the Mode "J" Club. I can only repeat some snippets from this newsletter as they are rather dated by the time they appear in AR, but I am sure many OSCAR fans must have qualified for membership of the Club and could receive their own copy — details have been published in recent editions of these notes.

Congratulations are due to Larry Roberts W9MXX, the editor of Mode "J" Newsletter, for a job well done.

Have you ever thought of exchanging your AMSAT membership during a satellite contact? If you work a station not possessing a membership number, give details of AMSAT and suggest he should join this elite organisation. The same suggestion goes for Mode "J" contacts.

LOOKING AHEAD

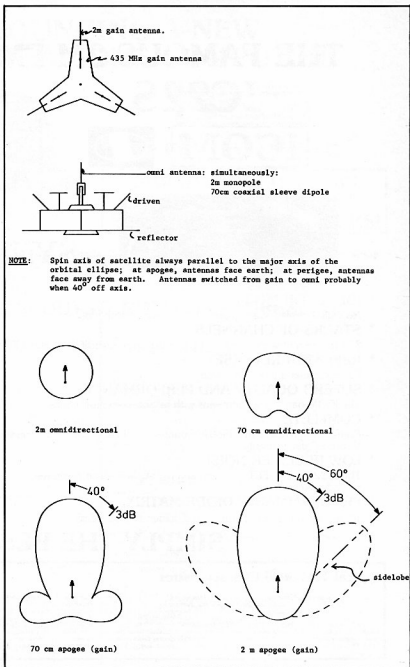
- 1980 May — AMSAT Phase III satellite.
- 1980 Sometime — Two more Russian Amateur satellites.
- 1981 September — UOSAT.
- 1984 A French Amateur Satellite is expected to be launched from Kourou in French Guiana on an Ariane Mission. It will probably carry two transponders, one on Mode J (up 145 down 435 MHz), the other with uplink 435 MHz and downlink 1260 MHz (this seems to conflict with the latest WARC information — Bob).

Do you realise the AMSAT OSCAR 7 has completed five years of operation? It is interesting to note that the prime load with which AO7 was launched only lasted about 1½ years.

OSCAR IN THE CLASSROOM

Bill Magnusson VK3JT who is vitally interested in the use of amateur satellites for educational purposes, has agreed to act as Phase III OSCAR Education Programme Co-ordinator in Australia. Bill has asked me to include the following notes:

"With the imminent launch of Phase III and the general upturn in interest in VHF, UHF and satellite communication, an attempt will be made in 1980 to tie together the very considerable educational possi-



SCHEMATIC 1: Spacecraft antenna placement and pattern AMSAT OSCAR Phase III-A.

bilities of the AMSAT programme in this country.

"I have been asked to act as education co-ordinator and one of my first priorities will be to compile and distribute a register, hopefully as complete as possible, of all school-based radio clubs or groups with an interest in the amateur satellite programme. A considerable amount of in-

formation of interest to such groups is already available from AMSAT and ARRL and I will be in a position to disseminate this and to act as a central source for collection and distribution of such information. I will also be making approaches through the various State education departments for advertising space in gazettes and journals and through standing com-

mitties in the physics, general science and electronic practices areas. I'm sure many secondary schools have radio clubs. Many such clubs are run by or have available a licensed radio amateur. I will be trying to show these clubs that it really is quite easy to become involved in OSCAR and that the educational spin-off is immense. It should be well within the grasp of even the most modest club to take part.

"Should anyone reading this feel they could contribute or require information, or would like to be placed on a register, they could write to me, care of Footscray Technical School, Ballarat Road, Footscray, Vic. 3011".

The following updated information on AMSAT OSCAR Phase III-A has been received from Steve Place WB1EYI and should be of value to those contemplating monitoring this satellite:

"AMSAT OSCAR Phase III-A, as all previous OSCAR satellites, will receive a numerical designator once it successfully achieves orbit. At that time it will be referred to as either AMSAT OSCAR X (probably AMSAT OSCAR "9") or AMSAT X (AMSAT 9), NOT OSCAR X. The proper abbreviation will be A-O X (probably A-O 9).

The latest updates on the projected orbital parameters (these figures are still tentative) are shown in Table 1.

Revised Maximum access time

The projected maximum access time has changed. Given the new period of about 10 hours and 28 minutes, a station at 30° N latitude, for example, will have about 9½ hours of continuous access. This, of course, would be for the ideal pass for a particular station at this latitude; stations at different latitudes will have differing times. Also, certain orbits may not be accessible at all. Apogee latitude will very gradually shift North, increasingly favouring higher N latitudes, and access times for a given location will change. Eventually, apogee drift will swing south and occur over the equator and below, favouring S latitudes.

Rate of change in apogee latitude

Immediately after firing, the projected initial latitude of apogee will be about 24.8° N lat., and of perigee will be about 24.8° S lat. The rate of change of apogee, and perigee, latitude (drift) will not be constant. The initial argument of perigee (angle in the orbital plane from the line of nodes to perigee — measured counterclockwise) will be about 210°; its rate of change will be constant at about 0.07° per day.

To determine the change in the latitude of apogee and perigee, use the following relationship (angle of inclination = 57°) (Wo = argument of perigee)

$$\text{perigee latitude} = \arcsin \{ (\sin i) \times (\sin W_0) \}$$

For example, ten days after firing, assuming the projected values are correct, the argument of perigee will have changed to:

$$210^\circ + (10 \text{ days} \times 0.07^\circ/\text{day}) = 210.7^\circ$$

and from this, we calculate that perigee will occur at:

$$\begin{aligned} \text{perigee lat.} &= \arcsin \{ (\sin 57^\circ) \\ &\quad \times (\sin 210.7^\circ) \} \\ &= -25.35^\circ \text{ ("—" means S lat.,} \\ &\quad \text{apogee is "+" Or N)} \end{aligned}$$

In other words, in ten days, perigee will occur about 0.5° further South, and apogee 0.5° further North. Again, the rate of change of the argument of perigee is constant, the rate of change of apogee/perigee latitude is not.

Firewheel — the primary payload

AMSAT OSCAR Phase III-A will ride piggyback", or as the secondary payload aboard the European Space Agency Ariane LO2 mission. The primary payload is an experiment called Firewheel which will be mounted atop what ESA calls the "CAT" or Application Technology Capsule. Phase III will be mounted below Firewheel, affixed to the side of the CAT. Firewheel comprises a series of canisters, arranged around the top circumference of the cylindrical CAT, containing explosives, lithium, barium and other compounds. When exploded, these will form a visible, "glowing", steam-like cloud, enabling scientists to study the patterning of the earth's magnetic field. Phase III will be clear of the experiment before the explosive charges are fired.

Transfer orbit bulletins

During the transfer orbit, AMSAT engineers will make precision ranging measurements to determine the exact orbital parameters as accurately as possible for the critical kick motor calculations. One-way bulletins

will occasionally be transmitted near apogee to explain the status of the mission, but the satellite will not be available for general use until a short time after firing. All are urged not to interfere with this work.

Special Service Channels

Included in the Phase III bandplan are six SSCs; the correct sequencing, placement, focus and co-ordinators follow:

- L1 Scientific (formal, scheduled) N1DM — 17 kHz up from General Beacon
- L2 AMICON (computer) WA2LQ — 21 kHz up from General Beacon
- L3 NTS (formal, record CW traffic) K1XA — 25 kHz up from General Beacon
- H1 CW/RTTY Bulletin, CW Practice W1EH — 17 kHz down from Engr. Beacon
- H2 Education (schools and ham) WB1EYI — 21 kHz down from Engr. Beacon
- H3 Phone Bulletin (international) G3IOR — 25 kHz down from Engr. Beacon

All SSCs are 4 kHz wide. Send all comments, inquiries and suggestions to the co-ordinators via AMSAT headquarters.

General Beacon format

The General Beacon, located at about 145.81 MHz, will contain much useful information. Each hour will be formatted the same so that listeners will know exactly when to listen to get the information they need.

A suggested format appears in Table 2.

TABLE 1:

Parameter	Transfer Orbit	Final Orbit
inclination	17.5°	57°
apogee altitude	34,385 km	34,385 km
perigee altitude	200 km	1,500 km
argument of perigee	190.587°	210°
drift rate (arg. of per.)	0.7838°/day	0.07°/day
anomalistic period	603.78 minutes	628.8 minutes
perigee latitude	about 3.2° S lat.	about 24.8° S lat.

weight of spacecraft: 75 kg (165 lbs.)

TABLE 2:

Time	Interval (minutes)	Duration (minutes)	Content
T0	0-1	1	CW i.d. and preamble
T1	1-3	2	basic orbital data
T2	3-6	3	CW telemetry data
T3	6-21	15	CW bulletin board
T4	21-26.5	5.5	RTTY rescans of above
T5	26.5-30	3.5	CW telemetry
T6	30-31	1	CW i.d. and preamble
T7	31-33	2	basic orbital data
T8	33-36	3	CW telemetry data
T9	36-51	15	CW bulletin board
T10	51-56	5	RTTY week's orbits
T11	56-60	4	fill to the hour with CW telemetry

CW code speed will be 15 words per minute.

Telemetry formatting

With previous OSCARs, telemetry was transmitted as raw data — numbers that were in themselves meaningless and which had to be "translated" by equations or graphs into meaningful data such as voltages and currents. Phase III, however, will transmit meaningful data that has been processed in its flight computer. During the 3 minute telemetry transmissions, 20 channels out of a possible 64 will be sent in a five number format. The first two digits will be the decimal channel number, followed by the three digit value. The user will look up a given channel number in a table in which he will be told where to place the decimal point and what the unit of measurement is. For example, 32498 would be channel 32 (decimal) with a value of 498. From the table, you would find that the value should be multiplied by 0.1 and was a measure of watts: transponder power out. The transponder was putting out 49.8 watts (this is strictly an example and channel assignments may change).

AMSAT calling frequency: 28.880 MHz (no scheduled activity but excellent source of information if individuals are monitoring. All are encouraged to check in).

The following diagrams illustrate the antenna arrangements on AO Phase III-A together with their patterns for 70 cm and 2m.

OSCAR 8 orbital parameters are forever changing and it has been difficult to predict what they may be at the time of

publication of these notes. It is surprising what a significant effect 10^{-3} seconds per orbit has when estimating times some 2½ months ahead. The predictions for February are submitted with "fingers crossed" and I hope they will turn out to be reasonably accurate — at least any inaccuracy should be consistent.

ORBIT PREDICTIONS — FEBRUARY 1980

OSCAR 7

Date	Orb. No.	Eqx Z	Eqx *W
1	23845	0119	87
2	23857	0018	72
3	23870	0112	86
4	23882	0012	70
5	23895	0106	84
6	23907	0005	69
7	23920	0100	82
8	23933	0154	96
9	23945	0053	81
10	23958	0147	94
11	23970	0047	79
12	23983	0141	93
13	23995	0040	78
14	24008	0135	91
15	24020	0034	76
16	24033	0128	90
17	24045	0028	75
18	24058	0122	88
19	24070	0021	73
20	24083	0116	87
21	24095	0015	72
22	24108	0109	85
23	24108	0109	85
24	24120	0009	70
25	24133	0103	84
26	24145	0002	68
27	24158	0056	82
28	24171	0151	96
29	24183	0050	80
30	24196	0144	94

OSCAR 8

Orb. No.	Eqx Z	Eqx *W
9728	0046	53
9742	0050	54
9756	0053	55
9770	0056	56
9784	0100	57
9798	0103	58
9812	0107	58
9826	0110	59
9840	0113	60
9854	0117	61
9868	0120	62
9882	0124	63
9896	0127	64
9910	0130	64
9924	0134	65
9938	0137	66
9952	0141	67
9966	0144	68
9979	0004	43
9993	0008	44
10007	0011	45
10021	0015	46
10035	0018	47
10049	0021	47
10063	0024	48
10077	0027	49
10091	0031	50
10105	0034	51
10119	0038	51

QSP

CW REQUIREMENT

The editorial in Oct. '79 QST seeks expressions of opinion by U.S.A. amateurs that there should be no change in Article 41 of the ITU Radio Regulations. This is the article dealing with the Amateur Service. The ARRL makes it clear that no change should be made to this Article — a position maintained by ARRL for some years. Despite this, the FCC proposed that the Morse Code requirement below 144 MHz be eliminated, "a change which is not wanted by the Amateur Radio Service it affects, and we don't like it". "Nearly everyone is concerned over the possibility that one of the strengths of the Amateur Radio Service would be eroded if these rumours are true". Well, as everybody now knows, WARC 79, dropped the minimum frequency requirement for Morse code to 30 MHz from 144 MHz.

INDUCTION COOKING RANGES

An article in Oct. '79 QST draws attention to a new technological development in cooking appliances to come onto the market soon. AC at a frequency between 20 and 40 kHz is circulated in a coil under a smooth ceramic cooking top. When an iron pot is placed on the top (which is in the induction field of the coil) eddy currents are induced in the pot causing it to become hot and cook the food within it. It is stated that the induction range is much more economical and there is no danger of fire from oil spillage because the ceramic cooking top remains cool, moreover it is easy to clean, being smooth. However, these ranges are a potential source of serious RF interference and the FCC in the U.S.A. has adopted regulations from 1.2.1980 which will apply to any induction cooking range using a frequency of 10 kHz or higher. Before any such range is put on the market certification is required that it meets certain radiation and conduction limits.

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1979 REMEMBRANCE DAY CONTEST RESULTS

WINNER — VK5 DIVISION

	a.	b.	c.	d.	e.
VK1	65	180	38892	40.6	15800
VK2	132	2035	66438	6.5	4309
VK3	93	1545	56941	6.0	3428
VK4	103	855	52147	15.7	8200
VK5	175	816	98990	26.8	28539
VK6	6	80	7599		
VK6A	93	462	68434	20.3	14395
VK9	1				
VK7A	63	184	46724	35.3	16936
VK0	2		1218		

Column.

- Full call logs received
- Full call licences issued (31 March 1979)
- Total points score
- Percentage participation of full calls
- Trophy score (a x c / b = e).

The following details show the section and the points scored:

VK1 CW					
PG	1408	CDR	98	PM	68
DH	928	RP	86	85U/P	54
DA	442	RC	82	DS	54
FT	372	8GG/P	80	JI	42
MW	252	BP	78	AYL	22
80BSP	192	KA	76		

VK1 PHONE					
GB	2604	RK	170	RP	436
JN	1945	AC	165	KA	435
TD	1864	ZBJ	162	BP	428
DA	1549	NCF	156	XU	416
NAT	1156	NAQ	153	VW	405
GM	1057	ZAR	148	KP	370
NBM	1029	AVM	131	NCE	370
KB	847	ACA	118	AYL	312
DV	840	ZCB	113	ZAH	309
MX	751	DS	112	PM	276
NBK	736	ZWP	95	RJ	271
NAT	726	MF	94	NAL	268
BR	625	JH	63	VP	264
RC	621	BH	60	NBF	263
KV	601	DG	58	JI	260
NAS	575	EF	52	NCP	258
NCL	565	EP	52	LF	252
FT	538	ZAG	52	ZT	250
RH	514	YS	50	DH	227
AW	486	8GG/P	37	8DB/P	228
RM	471	CDR	23	VI	207
NCN	471	85U/P	10	BC	193
NAM	453	ML	9	NBS	182

VK1 RECEIVING				
L10035	R. M. Pillifant			1312
L10042	P. Zarow			1194
L10062	G. J. Berger			918
	J. Galea			878
L10018	K. Ray			473

VK2 CW					
SX	1214	IC	248	BYF	66
AGF	1116	ZC	222	BCC	58
EL	892	DBA	220	NAW	54
CBF	822	ABB	212	DEW	50
QL	810	NMX	158	ASY	42
BAT	718	VM	152	BHM	38
BHO	628	BLK	128	DR	36
II	514	JM	120	AOA	34
QF	508	PN	102	BSG	30
BWI	434	BNL	100	ZMY	14
GT	400	BBB	74		
DO	340	IV	72		

VK2 PHONE					
DDS	2327	WT	324	NAW	119
ARX	2256	BDH	323	FM	118
DO	1824	HD	320	XT	116
BYF	1735	NHD	317	DEW	116
NVT	1689	NBS	299	NJU	115
DM	1550	NW	295	AJH	115
NMY	1540	OH	294	QC	112
BTZ	1320	DAI	287	DAB	107
WI	1236	BMX	286	NMX	103
NQL	1163	VJH	268	NBD	102
BPK	1058	CN	266	NUK	101
BDN	995	AGM	254	CF	99
DCL	937	VB	253	DDQ	87
BXD	928	AJL	251	VCO	86
VRW	901	WA	252	VEO	84
VKM	884	BRF	246	BDT	80
BAM	879	VIE	231	WB	78
DFI	856	AIC	227	LE	70
VDF	814	TK	226	NHA	69
VOJ	780	AZR	221	NNF	69
AWI	773	VE	217	HZ	67
ATZ	767	VJM	213	SW	66
RPR	754	VJN	205	RJ	62
DFA	731	VDN	184	BBO	62
DOB	724	AHH	192	VBX	62
VAO	627	APP	191	BLK	61
QV	613	OV	193	NYU	48
BQS	588	NWW	186	BYD	46
LF	581	BUT	183	VHC	46
SS	577	NWL	182	WG	40
AGS	576	NUA	176	ZVN	40
ASH	575	ALZ	175	ZLK	40
VAB	558	VBV	174	BCC	38
BJV	557	VJB	171	ASY	38
VNJ	552	DED	168	NVD	38
ASU	529	DEV	168	BSG	37
BFF	497	AQ	160	DBK	36
VEM	478	AIM	159	VOH	36
DEQ	462	VKM	139	ZTD	35
NZ	431	VOK	157	BHM	33
AOA	420	NV	155	AWX	30
BY5	417	BY5	152	BXQ	30
VE	394	AXV	144	WJO	26
BIP	347	VCU	144	AJD	24
BVR	370	PT	143	DDN	24
PN	359	DDD	143	DR	22
BB	352	CI	135	ZI	13
ABG	347	NNI	131	NYM	13
HQ	337	AKY	130	ZMY	13
NTF	333	VPK	125	YHU	10
VOW	330	VRJ	122	IV	7
DEE	328	VNA	119		

VK3 CW					
XB	1178	AMD	378	YL	134
AEW	1060	AJB	348	ARB	128
YF	788	ANI	322	AOK	98
FC	786	MJ	304	NEA	80
YK	638	AMG	290	ABA	76
DG	578	BOD	244	BKU	58
BDH	518	LV	220	APW	54
JJ	480	RJ	180	FA	24
VF	438	SV	178	BYA	22

VK3 PHONE					
WP	2554	BJQ	907	NEA	449
AQZ	2053	AQZ	882	BPN	436
BSH	1761	NAW	819	BRR	412
BPF	1707	GI	739	LP	386
WW	1624	BRM	688	VAH	363
NMI	1362	SM	673	NEV	361
BQB	1350	AYF	650	AFW	357
NLO	1327	XF	641	BHU	357
BIR	1275	BDL	590	ARV	315
NYQ	1243	EF	586	AZA	299
BHC	1187	BOD	580	AH	295
DS	1085	NAF	557	NCH	288
NSB	1056	ANA	553	BGT	280
ADW	1028	AMA	542	BLV	279
DF	989	NSQ	542	BYA	274
NLS	936	ZY	463	BIT	266

ZJ	262	YFZ	156	AJR	80
YLD	259	AIE	150	RN	73
ZYL	255	XH	138	ZFI	66
AVJ	253	BAX	137	AIWZ	65
NWH	245	YRP	136	BIS	62
BRL	243	AMW	134	VCE	62
YIW	241	VAN	132	BER	60
BJM	238	AAJ	131	ZBB	59
BGU	237	AYZ	130	YGOI	57
ZI	227	NLT	103	ACS	50
BKN	220	NZ	101	BYJ	44
BJU	202	AER	101	AVV	34
BKU	182	NOV	94	YLC	29
NYK	181	AUI	93	AMG	22
NRW	177	JI	89	VKR	21
NMX	167	BIJ	84	YCU	18
NZW	157	BGS			

VK3 RECEIVING

L30042	E. Trebilcock				788
L31203	P. Barclay				694
	N. Blake				579
L31158	K. Brown				403

VK4 CW

LV	1276	UA	408	GD	78
KX	1242	XA	386	XJ	76
GH	608	LT	280	OY	40
HH	608	JH	200	ZA	32
ARC	462	UC	186		
CJ	460	YG	182		

VK4 PHONE

UX	2088	LZ	324	ZBV	103
QO	1770	ADW	324	SW	101
NOD	1732	NXL	323	NWH	101
WIZ	1699	UG	313	DH	95
NAM	1625	UJ	311	JI	94
ADA	1254	OX	305	NVS	94
YQ	1238	RP	305	AEK	90
AGL	1236	AEM	287	AF	87
NOP	1215	NUJ	286	NCY	81
NOI	1199	AMJ	282	NOB	81
KW	1177	UC	258	RE	75
NFU	1054	ASG	244	ABB	74
ADP	1068	NTE	225	ZRFQ	74
AMB	1047	VV	219	ZRF	66
KD	919	FE	212	GM	62
DO	853	NOC	211	AHD	58
CI	808	NMB	208	MU	56
AAK	787	HB	205	PJ	56
TE	783	ACB	201	ZBJ	54
AKT	769	UA	193	FU	52
NUJ	757	VT	191	HZ	52
PK	758	NQ	189	AAU	51
OZ	728	NXX	188	IE	49
QZ	718	EH	174	NV	48
FN	714	MA	169	ALD	47
PS	695	NJB	157	QY	47
AMO	634	NHO	156	NHR	46
AYD	600	NVM	150	NRI	37
FT	592	ABM	140	XZ	34
AG	566	ABA	139	ZTV	34
AOH	565	DS	136	PV	30
RT	543	CZ	135	VU	27
AAM	462	NGU	132	AHO	25
NK	425	AK	127	TK	24
NBS	366	NXF	127	GT	22
ZN	343	WT	123	NLV	19
NOM	341	NS	120	NMS	13
AST	338	PZ	120	ARH	11
NU	337	LE	106	ZGE	11
FX	325	NXJ	105	ZSD	11
IZ	324	CY	104	ZA	7

VK4 RECEIVING

L40018	C. Thorpe				230
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VK5 CW										VK5 RECEIVING										VK6 CW										VK7 RECEIVING									
UM	1264	NLC	300	KQ	84					RS	826	PD	318	BD	322	DG	143	NAD	59																				
BN	1016	QR	216	ZX	84					L50340	R. A. Cunningham				307	JG	139	ZPB	58																				
OR	938	QQ	194	AU	66										NXB	295	DL	138	RP	49																			
FM	826	RT	180	JG	66					BBC30785	D. Nelson				NFR	275	ZAT	137	ZBY	36																			
SW	804	FX	174	PK	52						R. Dayman				344	NJX	248	NOW	136	KS	35																		
XW	656	ABB	130	NJQ	52						D. Warrington				112	NGR	228	NAM	124	AX	35																		
LI	654	KU	116	KL	48					L50122	G. Edmeades				85	PS	224	ZLB	118	ZAJ	26																		
HO	385	RG	94	NMQ	38										NOA	201	ZTA	102	NS	28																			
VK5 PHONE										VK6 PHONE										VK7 PHONE																			
QH	2562	VV	349	ZHR	114					NBU	2863	EV	523	ZCB	163																								
GH	2123	ASA	347	NAQ	111					PD	2604	AN	520	NCZ	145																								
MM	1987	ZAT	345	WI	109					JP	2276	HU	505	DA	141																								
KL	1886	OL	343	WIE	107					FS	2214	EB	503	NCU	133																								
WV	1697	ADW	338	NRQ	107					NFI	2111	TP	502	KY	127																								
LP	1388	NEB	333	ZJJ	105					RG	2054	LP	493	YO	127																								
NTB	1347	NLS	324	SE	104					AO	2047	FO	420	GL	125																								
ARC	1345	NCD	316	EQ	103					MF	1771	EO	401	ZLT	120																								
NX	1278	ZCM	316	DJ	102					ER	1744	NEY	401	JD	104																								
ABP	1275	NAJ	314	ACE	102					YL	1721	FI	400	AWI	94																								
ZH	1253	NHB	314	DF	100					ED	1633	RL	393	NDK	87																								
DV	1152	AZ	312	XL	99					KC	1147	BD	375	NHR	83																								
OU	1100	NHO	309	NJS	99					NQA	1145	SH	374	NDY	83																								
AGO	1090	NDG	307	VB	97					WV	1053	XC	362	NE	75																								
DK	1089	ZBI	304	EC	96					GW	1041	GA	342	OK	73																								
NN	1084	AJJ	301	NTC	95					NGV	1012	OX	337	WI	72																								
BI	1081	LQ	300	US	94					UN	872	YE	336	YM	71																								
TV	1057	RV	294	AZM	94					IW	858	NGC	334	WZ	68																								
ZK	1017	VG	294	NCN	94					UT	834	CN	322	SO	53																								
LF	968	ZE	284	NCY	94					NOR	831	LV	321	KI	60																								
LZ	932	ZF	278	HY	93					WT	810	NAG	289	GI	59																								
DR	928	NBG	275	YX	89					NFA	810	ZIT	288	LN	59																								
TS	921	NTK	274	NCH	88					XJ	801	CR	270	ZC	56																								
NJE	914	SW	271	PP	87					DY	800	HE	259	GB	55																								
ADD	887	NRZ	269	NHR	87					XP	754	ZT	256	NCQ	55																								
DI	848	NPF	269	EP	86					JX	748	UX	248	NEA	55																								
TZ	841	RX	267	NTT	86					NGH	726	UH	243	ZHU	44																								
NNC	839	NXY	265	NOC	84					JK	711	NOB	220	FM	41																								
XT	833	PFE	263	NPG	84					PG	627	BE	219	LG	35																								
AIC	827	ZVC	262	NJQ	83					FE	610	TU	216	NGJ	32																								
EN	745	NKE	251	AP	81					WL	599	OR	211	JY	17																								
XZ	723	OM	246	NWP	81					VG	592	OD	198	ML	15																								
NDF	719	ABS	241	ZEH	79					NHA	588	NDV	178	ZCU	11																								
NKA	716	NGP	241	KK	77					NHK	579	ZGA	176																										
SN	698	AKS	237	ZJ	77					VK6 RECEIVING										VK7 CW																			
LN	694	OT	234	ZSV	77					L60030	F. H. Price				1702																								
SU	688	UW	222	GF	75						D. Robson				1835																								
AMW	668	ZZ	220	GG	72					L60036	K. Dean				770																								
BW	645	ADC	219	NJT	72					L60013	L. Baxter				263																								
IN	642	NMY	208	NR	71					L60028	G. Mann				183																								
KR	623	ARV	203	IR	70						D. Greensaway				183																								
NDN	615	EF	200	UE	70						J. Handscombe				174																								
FO	576	HN	198	OC	68					VK7 PHONE										VK8 CW																			
ATW	571	NVW	194	YQ	66					RO	1330	GB	288	CF	252																								
QN	568	ZRJ	193	NGK	64					CH	858	ZO	280	NRT	26																								
ZJJ	554	RI	188	NJO	64					BC	766	GV	244																										
NCL	551	SG	182	KE	63					VK8 PHONE										VK9 CW																			
HI	544	NGA	180	DO	61					KJ	1985	NHA	713	JT	515																								
ZG	539	PK	177	IO	60					NJD	1847	NDP	711	RM	506																								
QI	533	AQ	175	YW	59					KZ	1711	MX	707	AK	494																								
FX	528	AVQ	174	ARX	59					KI	1711	DK	680	TT	488																								
CGR	528	YV	173	ZAR	58					HK	1630	EB	575	NRT	464																								
NJ	510	LC	171	NKC	58					HD	1429	SG	651	JA	458																								
NLV	499	NB...	157	NRA	57					RG	1060	JU	652	PF	459																								
QI	492	NKG	167	VU	55					NVH	1038	NJC	544	NPK	440																								
NFC	488	ZJE	156	CA	54					GD	961	BC	630	NPL	438																								
NBY	482	RK	161	HW	54					NSA	955	EM	612	HV	436																								
NBJ	472	NSA	157	UX	52					AW	899	WI	612	EJ	421																								
ATM	470	VE	156	ZKK	50					NRH	884	OH	596	LZ	412																								
LM	447	ZBC	156	NCC	43					NPC	870	NHT	575	SF	404																								
NMQ	445	HM	150	AWI	42					KC	800	BH	572	BM	358																								
NXT	434	KH	149	NIC	42					NEA	784	NPV	559	NW	347																								
IZ	379	ZB	145	NGO	42					KH	746	NDY	539	SS	333																								
NCB	427	NEH	145	AC	38					VK9 PHONE										VK10 CW																			
BP	410	NGC	144	OF	36					KJ	1985	NHA	713	JT	515																								
NCX	407	NSW	142	ZIS	35					NJD	1847	NDP	711	RM	506																								
SS	402	NNE	142	NS	29					KZ	1711	MX	707	AK	494																								
LL	400	EV	140	QV	28					KI	1711	DK	680	TT	488																								
NHG	399	RR	139	AKR	33					HK	1630	EB	575	NRT	464																								
IT	396	ZQ	137	ZAP	33					HD	1429	SG	651	JA	458																								
NI	379	ZB	136	BTP	32					RG	1060	JU	652	PF	459																								
NEN	379	WN	134	KT	26					NVH	1038	NJC	544	NPK	440																								
NWT	378	NRO	133	JG	26					GD	961	BC	630	NPL	438																								
AIM	376	BG	129	RG	26					NSA	955	EM	612	HV	436																								
EA	359	NCK	129	OX	25					AW	899	WI	612	EJ	421																								
FI	359	OZ	128	NR	23					NRH	884	OH	596	LZ	412																								
XL	359	IZ	125	NCS	23					NPC	870	NHT	575	SF	404																								
NHM	358	TV	125	ZTA	22					KC	800	BH	572	BM	358																								
NVD	358	WC	124	TL	20					NEA	784	NPV	559	NW	347																								
ALM	355	NAT	124	ZGZ	20					KH	746	NDY	539	SS	333																								
NTU	355	NMS	122	IX	11					VK10 PHONE										VK11 CW																			
DH	355	YY	121	RT	7					KJ	1985	NHA	713	JT	515																								
NDW	352	NHC	121							NJD	1847	NDP	711	RM	506																								

Log presentation has improved dramatically this year ably supported by some divisions distributing well designed front sheets to entrants.

Especially noteworthy was an entry from Frank VK2Z1 who is totally blind. His log was a verbal one on tape and I was delighted to be able to score his entry for him. All but one contact was through an Oscar satellite.

From my own observations during the contest there was a very friendly atmosphere evident but this did not flow through with all entrants! The comments and threats I received, with a small minority of logs, showed some amateurs in a very poor light. I cannot accept any blame where an entrant fails to read the rules before entering a contest.

I will, however, apologise for being a little late with the results but I was absent from Orange due to work commitments for the best part of three months from September.

The 1980 "Friendly" contests will be even better and bigger than before and I am looking forward to an even larger number of entries. Thank you for supporting your divisions and the memory of those who paid the supreme sacrifice. ■

NOVICE NOTES

BEWARE THE SWR METER

For many years standing wave ratio has been the yard (or is it metre) stick when antennas are discussed. This has been accentuated since the advent of CB. Many CBers would be happy with a piece of wet string if it showed an SWR of 1.1 at the end of a 50 ohm line.

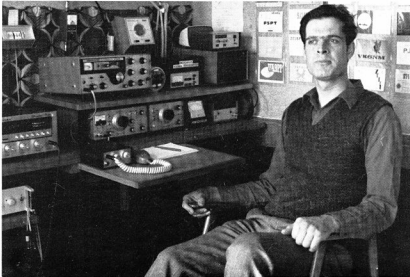
The only thing that an SWR meter will tell you is how close the match between the feeder line and the antenna feed points is, it will not necessarily tell you if the antenna is resonant. If the antenna feed point happens to be the same as the impedance of the feeder line, the SWR meter will give you the right answer, i.e. that the antenna is resonant.

However, in practice, the antenna may have anything but the right feed point impedance. Indeed the rule is generally that it is not. Let us consider the quarter wave vertical for a moment fed with 50 ohm coaxial cable. With a very good ground plane, this antenna will have a feed point impedance of about 35 ohms at resonance. This will exhibit an SWR of 1.4 to 1. Often the SWR is lower, around 20 ohms or so resulting in an SWR of 2.5 to 1. Altering the length of the antenna to get the SWR down will shift its resonant frequency and decrease its efficiency.

You may ask: what about losses due to high SWR? A study of a chart in the ARRL Handbook in the chapter on transmission lines showing losses against SWR, will reveal that the SWR has to be quite high, 6 to 8 to 1, before these losses will cause concern.

Your next question is: how else do I do it if I can't trust my sacred SWR meter? The answer lies in three instruments. The

THE MAN BEHIND THE MICROPHONE



first is a tape measure. If you are erecting an 80 metre dipole, measure it, first of course, find the correct length and here again, there are charts in ARRL Handbook. The second instrument is that sadly neglected field strength meter. After all, you are only really interested in making your antenna radiate the best signal strength that can be achieved. The lowly field strength meter will do just this, indicate the relative radiation directly on the meter — and with no ifs or buts.

The third instrument is an antenna impedance bridge. This will tell you two vital values — the resonant frequency and the feed point impedance of your antenna. There are a couple of instruments on the market for about the same price. The Palomar RX noise bridge is the better of the two as it will also give the inductive or capacitive reactance of the antenna. With this instrument we can also determine the impedance.

Submitted by
Denn's Breitkreuz VK4ZEW/NMK ■

CQDX GROUP REFORMED

Owing to internal problems the CQDX Club has been reformed. Irresponsible and selfish behaviour on the part of a minority of the members, and the fact that the hams in the group have now found that they have little in common with the CB element, caused the whole concept of the club to be reviewed.

It must be pointed out that though the CBers in the club were amongst the most responsible of the members, there was little to offer them once those who wished to attain amateur status had done so.

MAN BEHIND THE MICROPHONE

Many stations recently worked VK2DFM alias Konrad HB9ARQ on his recent visit to Australia. Konrad hails from a small village in the eastern part of HB9 near Lake Constance and the Austrian border. He is QRV with an FT200 and tri-band beam on 10-15-20 metres and on RTTY with a modified model 25 teleprinter. Konrad enjoys activity on VHF and UHF with 15W SSB into a 10 element yagi on 2 metres and on 432 MHz using a 28/432 MHz transverter into a 19 element long yagi. ■

We have issued a new certificate and an honorary committee comprising VK3s NDO, NNR, NOA, NNY, NAC, VEW, VGO, NDO.

So far these amateurs are the only members of the new club. Three or four former members are being approached to rejoin, and a couple of others have been excluded.

The group is now strictly an amateur DX group. I am acting as honorary secretary but there are no other official officers and no dues other than THE WILLINGNESS TO CO-OPERATE WITH EACH OTHER.

The new rules are simple . . . go all out for DX by all means, but never forget to help others whilst you are doing it. The code set down by Paul M. Segal still applies.

In short . . . give your mates a go . . . an old Australian tradition that seems to be less in evidence these days.

From Trevor C. Reid VK3NNR. ■

**Eric Jamieson,
VK6LP**

AMATEUR BAND BEACONS

433 250 ZL2VHP — Manawatu
10370 ZL2UHF — Wellington
* Denotes attended operation.

"On 5-12 VK2ZZV, VK2ZKT and VK2ZIE were worked, then VK4ACE, Denis, a new station at Mt. Isa called in around 0800Z. At 1250Z it ceased

to the regulars in VK7. On the 6-12 and 7-12 only opened to VKACE and the Townsville gang, and on 8-12 to VK7 again, plus VK3GCM. On 10-12 very quiet during day but open to the VK7s again at 1230Z, with just enough time to say 'Good evening' before the band shut for the night! With few exceptions conditions were such that signals would reach 5 x 9 then disappear quickly. The beach news stations have been weaker, though fairly consistent at times.

"On 11-12 daylight hours very quiet, one pleasant contact was with Lance VK5ZBC, the first in many years, the QSO jointly with VK5RO was on 'Adult Modulation' with excellent signals all round!

12-12 0510Z VKACE followed by VK4JH, plus others, band staying open until 0742Z to VK4. At 0850Z Graham VK6GB heard in QSO with VK4 but weak in Adelaide. VK4 working VK3, and VK4RO's QSO with QSO on 52085. 0815Z VK5ZDR worked VK7ZLB, at 0940Z Ray ZL2KPT worked several VKs at 5 x 9. At 1030Z VK4 to VK7.

"13-12 Townsville beacon 0500Z, followed by Hal VK4DO chasing Ross Hull numbers, at 0635Z to VK2ZF, 0735Z VK4ZTV, then Bill VK4ZWH and John VK4JUT, VK4ALM and VK4ZAA. At 0916Z Geoff VK6GF heard calling L, then he was worked in Adelaide 5 x 9 0948Z, and attempts made to hear Geoff's two metre signal. Considerable activity between eastern States and ZL.

"14-12: Nothing until 0900Z, then VK5AMK worked Tony VK6SB at Northam, then band opened to VK6SB. Mike then back to VK6WD, VK6QX, VK6OM, VK6EZD, VK3KZ and others. Beacons from VK2, 4 and 6 during opening".

Thanks for the fill-in up to this date John, which now allows me to continue with some information to conclude the chapter from my own log.

18-12: VK4ZBV at 0443Z and VK4ZBJ at 1129Z, nothing else. 19-12: 2305Z VKACE 5 x 9. Continued to fiddle the fingers until 23-12 when VK4ZLB came in really early at 2237Z, followed by a string of other VK4s and VK2s, but the VKs mainly confined to the morning. On 21-12, 0140Z VK6GF worked 9 x 9 so strong in fact we just had to try 2 metres with him, but the absence of any short sky stations indicated the MUF was not high enough. At 0515Z J1JERG heralded the first opening to JA for some time, this time assisted by Es. JAs were mainly 5 x 9 and covered JAI, 2, 7, 8, 9 areas.

Of particular note on 22-12 were very strong signals from SD signals on Japanese stations on 50 MHz but not reaching 52 MHz. The JAs were working themselves via a strong Es opening in their own country — it was interesting to hear them calling their own call areas. Hal, VK4DO reported working 1657 JAs from February to November 1977! Incidentally, the JAs on 23-12 worked in VK1, 2, 3, 4, 5, 6, 7 and 8 as far as we know, with signals into VK3 being the strongest. Not many call areas left for them to work that day!

24-12: JAI to 9 areas, VK4ZAZ, and VK6GF, plus VK2BXT advising he will be shifting to Sydney from Moree in 1980. Speaking to Graham VK6GB on 28805 liaison frequency, he advised Brian VK9VV lost his four 2 metre beams in a recent storm, and that Brian would be going to P29 (Rebault) for a period of 3 years during 1980. Graham advised that 2, 3 and 4 had been worked from Darwin this year, plus P29 twice. He was hoping to work the Balli DX-pedition during the next few days up to 5-10. The VK9VF beacon is at present running low power since the storm.

25-12: Started off a bill slow, probably everyone eating Christmas meals! At 0736Z opened to VK4, then VK3ATN backscatter at 0805Z. At 0847Z VK4ZBJ, 0852Z VK6KZ, 0925Z VK2ASZ plus others, 1104Z VK3ATN again on backscatter, also VK6BHS, then just to complete the day Aub VK8XY in Albany worked on 144.990. Also noted that H4PT worked VK4JB at 1645Z for first H44 to VK4 contact I am told.

26-12: Early start at 0135Z to VK4DO, still chasing numbers, gave me 5874F! At 0142Z VK6GF so strong again that 2 metres had to be tried! 0204Z VK4ZBJ, 0205Z VK6KZ, 0215Z VK2ASZ plus others, the day until 1031Z. Report received that Les VK3ZBJ had heard a VK8 (867F) in Melbourne on 2 metres. 27/12: Open to VK4ZNG at 2335Z 5 x 9. We then had a spell until 29-12 when Joe VK4JH

came through 5 x 9 at 0025Z, then VK4ZBJ, the remainder of the day was a rest period from Es!

30-12 opened early with VK4ZLS at 0047Z, then an interesting set of conditions produced very strong signals from VK3 northern areas from 0050Z, with VK3ANP, VK3YNN, VK3OT and VK3ATN predominating. Later Ken VK3AKK was heard at 0139Z at 5 x 4. These short sky conditions caused the VK3 stations to scurry on to 2 metres because Es were bringing in strong signals from VK4 at the same time, but no success. Ted VK2ARA was grabbed at 0145Z 5 x 9. Open to VK4 for most of the day, at 0942Z VK8GF 5 x 9 again, followed by 5 x 9 signals from VK6ZKO, VK6ZED, VK6BV, VK6RO, VK6ZZ and others. At 0930Z observed VK4ZLB working VK6WD and others, 5 x 9 reports. Tony VK6BV advises he could be on 432 MHz soon.

2-1-80: Probably the last of any worthwhile Es for this period, opening at 2316Z to VK2AS, VK2ZRU and VK2BHO. John VK2BHO almost always alerts us the band is open because his strong CW signals herald the opening! At 1148Z VK7ZIF and VK7ZTA, and the same two stations again at 2232Z and 2233Z, and said "Goodnight". Lance VK4ZAZ worked VK2BXT, and reports came through during the opening that W5XJ had worked ZL on 31-12. Also a report from Gerry VK5ZZZ that the DX-pedition to Bali, YB9X/F had worked 160 JAs on 6 metres up to 2-1 but no VKs — that's not surprising considering the lack of Es from the Darwin plus area this year.

SIX METRES FROM SUNBURY

A newcomer to six metres, Graham VK6ZGS, has been thrilled with his work so far to date, and I can understand why. On 10-10 he obtained an IC502, and the following day had his first contact to JA from his car, using the IC502 barefoot to a whip antenna! When I think of the years to look me to work my first JA ... SLP. At home Graham runs the 502 into a 25 watt linear and a bow-tie antenna with 6 dB gain. On 11-10 mobile between 0640 and 0645Z worked VK5YA, VK5ZDR, VK5RO and VK5ZPE the latter up to 5 x 8 on the handbag! From the home shack on 3-12 worked a string of VK2s plus heard VK3OT and others. 4-12 VK4 barefoot. And so it goes on.

Good luck Graham, hope you passed the CW in November, and also hope this won't mean you will forsake the VHF bands!

A LOOK ON TWO METRES

One might be forgiven for thinking there is no two metre activity with so much happening on 50 MHz, but this is not the case. Looking around the country, I now confirm via the VK5 VHF Group Bulletin that a new two metre internal record has been established there between Andy VK6OX in Carnarvon and Aub VK8XY in Albany, on 144.100, during October-97. Distances 119 km. Repeated on SSB on 2-11-79, CW on 11-11-79. Perth stations were the first to report reception of the Carnarvon beacon via K5RTT on 144.600 MHz.

VK5CK STIRS THE VKs

From his hilltop location near Piccadilly in the Mt. Lotfy Ranges, Dave VK5CK using a pair of stacked 13 element beams (a la SLP) and about 50 watts has certainly been stirring up the VK3s in all directions. The following details are given in the hope that VK3 won't despair that their efforts go un-noticed, but do remember there are other VK5s available too, but not from such a super location, therefore, they will probably be weaker!

18-11 starts off this saga, most contacts unless otherwise noted have been on 144.1 or thereabouts, and signal reports mostly the same both ways. So our old friend Roy VK3AXV hits the receiver 5 x 9 + 8, and we have same again on 19-11: 21-11: VK3VII 5 x 5, VK3ZHP 5 x 2, VK3ZHP 5 x 2, and heard a VK7 working a VK3. 27-11: VK3AXV 5 x 9, same again 29-11, 1-12: VK5XY 5 x 9, VK3ATN, VK3AXV both 5 x 9, VK6ED 5 x 1, VK6NL 5 x 1, heard VK3ARM. 6-12: VK3YII 5 x 9. 18-12: VK3AXV 5 x 9, 21-12: VK3AKP 5 x 7. 22-12: VK5SD 5 x 5, VK3YIV 5 x 4, VK3ZHP 5 x 1, VK3ZHP 5 x 5, VK3YNN 5 x 5, VK3YRV 5 x 1, VK3YLV 5 x 7, VK3AXV 5 x 9, plus a brief CW contact with K3AUU 5 x 1.

25-12: VK3ATN 5 x 5, VK6WG 5 x 5, VK6BE 5 x 5, VK3AXV 5 x 9, VK3ATN 5 x 7, VK5KD 5 x 5. 26-12: VK3YPD 5 x 1, VK3AXV 5 x 9, VK3YII 5 x 2,

VK3ZBJ 5 x 5, VK3ZE 5 x 7, VK3BFY 5 x 5, VK3ATN 5 x 5, VK3YLV 5 x 6. 29-12: VK3ATN 5 x 3, same on 30-12. And that sort of thing is still continuing!

It is interesting to note that daily contacts both early morning at 2100Z and at night 1100Z have been made between a number of VK5 stations and VK3ATN on 144.100. Signals for some reason or other not been heard for some time, but they are always there. Those participating have been VK5CK, VK5RO, VK5ZDR and VK5LP, occasionally others. Most reports have been from 4 x 1 to 5 x 3, with somewhat stronger signals at 5CK. 432 MHz signals have been heard from time to time between VK3ATN and VK5LP, but only weak, on CW.

OTHER TWO METRE NEWS

Perth beacon VK6RTW copied in Adelaide 1000Z on 18-12 at ST1. New Albany stations on 2 metres are VK6EO, VK6ZKJ and from Denmark further west VK5NL. On 14-12 Wayne P292WV worked into the 2 metre repeater at Townsville, later made contacts via Ch. 50 and on SSB ... 25-12 VK6MZ heard VK5VF beacon on 144.800 on 0630Z, so it looks as though the path on 2 metres to Perth could be just around the corner once more ... VK6RTW worked four VK3s on 432, and also VK3ACH on 1295 MHz, CW both ways. This latter contact a bit difficult as VK3ACH was keying his FM carrier ... 2-1-80: VK3ATN worked VK2DGV in Griffith who had an IC202 to 5 element beam at 15 feet! ... Roy VK3AXV runs 80 watts on 2 metres, very fine signal at VK3JL QTH ... 2-1-80: VK3ATN worked 432 MHz signals here at SLP do very well on 2 metre working — backed up with the masthead pre-amplifier I can work anything or anyone I can hear!

TROUBLE DOES REPEATER

From the "Propagator" comes this month's bad luck story: "The Wollongong repeater is on Ch. 5. First a savage storm caused damage to the receiver, transmitter exciter, and the control unit. Five transistors had to be replaced; amazing damage had not been worse considering some grass grew in the vicinity of the transmitter cubicle had been burnt by lightning. A large tree nearby had been burnt on one side.

"Two weeks later, another storm took its toll of transistors, this time in the control unit.

"Last week's hailstorm which hit Sydney had its epicentre in Robertson. The force of the hail tore holes in the top of the transmitter cubicle, allowing water to penetrate. The water got into the decoder for the auxiliary receiver used for the relay to the Sunday broadcast. A special ground stake has been installed in an effort to reduce currents in the landline due to surge currents from the lightning".

Apart from a gale smashing the whole assembly there doesn't seem much more could wrong with the installation. Let's hope your troubles are now behind you, boys.

SECOND ARRL EME COMPETITION

Gerry VK5ZZZ sends me a copy of the results of the above competition, conducted on 144, 432 and 1295 MHz, with world-wide participating stations. It was won by K1VHS who scored 70,200 points, heard 47 EME stations and contacted 39 of them, on 144 MHz only and using a 160 element collinear. 103 stations from everywhere participated, the average QSO for single operator stations was 13.1. The set-up at the winning station consists of the 160 element collinear fed with 7/8" heliax, has 3N21 MOSFET preamp mounted at the antenna with a 1.4 dB noise figure, homebrew converter and 75A3. Homebrew transmitter used 6360-4CX350A-877 running 1000 watts. Next year they plan a bigger and better antenna!

Number two position went to W8SLU, one of the few with 144 and 432 capabilities. His preamps both use DXL 3501A GaAs FETs with 0.5 dB noise figure. The top 432 MHz honours went to F9FJ who used sixteen 21 element yagis, an HP HFET1101 GaAs FET preamp with 0.3 dB noise figure, and a pair of 4CX250Rs.

Pleased to see Chris VK5MC was able to participate, using his 6.6 metre dish to run up 3600 points with 6 stations heard and worked.

Some stations are very well set-up when one peruses the list. I note ZESJ has the 10 metre dish working, whilst JA6DR has a 12 metre dish.

OPPORTUNITY to obtain back copies of AR

To make space in the new executive office it is proposed to deliver for paper recycling all EXCESS COPIES of AMATEUR RADIO accumulated from MARCH 1972 to DECEMBER 1977 inclusive.

Anybody interested in specific issues should apply at once to

PO BOX 150,
TOORAK, VICTORIA 3142
with lists of requirements and
PAYMENT OF 30 CENTS
per copy to cover postage and
packing.

Regrettably some issues of these ARs will not be available, being out of print. Orders will be processed as time permits so some delay in despatch must be accepted.

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3.08	1	8	3	No. 3010	\$1.40
3.16	1	16	3	No. 3011	\$1.40
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One wonders at the mechanical problems that must confront stations like YU2RGC who uses sixteen 23 element yagis on 432 MHz — and the complexity of feeding the monster. Even K2OR heard one station on his single 15 element yagi on 2 metres!

And what about W4WD who ran up 12000 points using sixteen 46 element J beams!

ROSS HULL CONTEST
A few stations around with some very high scores, but the facility of being able to commence at any number up to 1000 makes some of the early high numbers rather suspect. I note VK3ATN has been making a good effort to gather numbers and using several bands to do it. He has managed to stir up some interest in VK5 to get some stations on night and morning at least on 52 and 144 to exchange numbers, but the conditions have been fairly poor so it has been a struggle at times.

An effort to ensure the Contest continues I hope those operators with lower scores will send in a log particularly as the Contest Manager has suggested a photocopy of your log will be acceptable — this to me is a very sensible departure from previous requirements.

THE EQUINOX
Those keenly interested in six metres will be looking forward to the March/April period in particular in the hope we may have a chance to share in some of the outstanding conditions already enjoyed by stations in the Northern Hemisphere. It is clear that March/April last year was better than September/October last year, and in the Northern Hemisphere it is the other way round, September/October seems to have been superior to the earlier equinox. This seems to suggest conditions are more favourable during the autumn than the spring, but only time will tell.

Just a few suggestions which might help to pave the way for an increase in exotic contacts:

(1) If you can monitor between 30 and 50 MHz watch for a rising MUF which will be shown by overseas commercials becoming apparent in that

area. Even two-way radio stations are audible from U.S.A. and elsewhere, and are a good guide to possible contacts. These will mostly be heard during our mornings, say from 2300Z through to perhaps 0200Z or even later.

(2) If the 40 MHz+ area is active, keep a close watch on 50 MHz with the beam to the north east, in this position you will also hear the JAs if they are strong enough to work. But hearing signals on 50 MHz doesn't always mean they will be on 52 MHz, the MUF sometimes does not rise that high! And don't cheat, wait and work stations on 52 MHz, not 50 MHz. Remember, most overseas areas are dead set against out of band contacts and wide publicity about the VK position has been given in overseas publications — you may not care to have your name on the ARRL and SMIRK blacklist!

(3) When the band is quiet operate on 52.050 by all means — that was the purpose of originally deciding on a calling frequency and it is known overseas. BUT, please do leave a few seconds break between overt to allow another station, perhaps from an exotic area, to call in. If the band is in good shape, then after establishing contact on 52.053, move away to allow others to monitor the frequency. The worst thing you can do is to use 52.050 for a crossband contact and so block the frequency for lengthy periods, the only exception might be if you are using VK so there will be periods when you and your listening station will have a chance to hear another station.

(4) Perhaps most importantly, if you are lucky enough to get a contact with a rare station, keep the contact SHORT, remember there will be many other stations wanting to work him, and the conditions may only remain for a few minutes. All you need for a contact is to exchange signal reports, plus names, a request for a QSL, then sign off, the whole exchange need only take 1 to 2 minutes. This way you won't have other stations breaking in and generally frustrating others and getting a bad name on the band. There is absolutely

no justification for ANY station to have a prolonged contact with a rare station — do the right thing and share him with the multitudes!

So I feel if you bear all of the above in mind there could be many stations sharing some good contacts, particularly if P&T see fit to join with other administrations and recognise the need for Australian amateurs to be able to share in some way the 50 MHz area at least by 1st March 1980!

Closing with the thought of the month: "In the game of life, as in other sports, you can pick out the winners — they're the ones who aren't complaining about the officiating".

73, The Voice in the Hills.

QSP

AMATEUR LICENCES

As at 30th June, 1979, there were 12,062 licensed VK amateur stations of which 2,974 were Novice, 3,108 Limited and 5,986 Full Calls. For States, NSW led with 4,043 and Victoria 3,425. NT showed 65 per cent as Full Calls, ACT 63 per cent and the national total 49 per cent — the lowest being Queensland with 44 per cent of the national total. Novices were 25 per cent with the highest percentage of 29 per cent in Queensland and the lowest in the NT of 8 per cent. Limited calls showed up as 26 per cent of the national total, ranging from 31 per cent of the Victorian total down to 16 per cent of the ACT total. At the same date licensed CB stations on HF totalled 173,507.

TF LAND

In a letter to AMSAT (September 1979) Kristian TF3KX briefly outlined the level of activity in Iceland. There are approximately 100 members in the national society, of which 20 to 30 are active on HF, VHF or in special fields of amateur radio such as RTTY, etc. It may pay to also keep a listening watch on OSCAR satellite frequencies from time to time, as Kristian and fellow amateurs are becoming active using OSCAR.

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

Lot 92, Russell Ave., Woodend 3442
9th January, 1980

The Editor,
Dear Sir,

I am writing to you with an appeal. The appeal is to ask if there is any radio amateur reading this who might be able to help me in learning about RTTY. Just recently I obtained a Model 15 teleprinter and I set it up to the point where I can copy reasonably well. However I do need some more help in getting it all to work very well. I am at a disadvantage in that I live in a remote location and have no effective means of contacting anyone else except by letter. There is no Wireless Club where I can see other amateurs and learn from them. This is also one of the reasons that I have lacked the confidence and the knowledge to go for my ticket.

Whilst I have visited the "shacks" of some amateurs I have had virtually no contact with any amateurs for some time now and I have never had an amateur come here and visit me.

Terry Robinson L31105

5 Lyle Ave., Lindfield, N.S.W. 2070
26th November, 1979

The Editor,
Dear Sir,

Would you kindly publish in our magazine this note of appreciation.

I have just returned from a yachting trip in which I was navigator/radio operator. Just before typhoon Tip commenced to build up we lost our engine due to mechanical failure and when the storm started we ripped our mainsail and later our backstay bracket failed so we were without propulsion.

By using me to thank all those hams who assisted by passing messages to the captain's YL to obtain replacement parts for the engine and to my YL to advise her of the details of our rescue by the United States Navy and Coastguard. I am especially grateful to the operator, who was the Marine Operations Centre in Canberra to advise them of our "Mayday" calls and who also rang a well known amateur friend of mine in Sydney.

My only disappointment was to find that an amateur I "knew" from previous contact did not know how to react to a mayday call but casually remarked to the station he was working that he had heard a "mayday" which appeared to be coming from New Zealand and then went on rag chewing.

This contrasted to the American hams who kept watch on my frequency and chased off anyone who started transmitting within 5 kHz of me. (I have ten kilohertz all to myself now that I am back!) The principal amateur in our rescue was KGBJBX who remained on watch for 48 hours except for the period from 0200 to 0900 LMT on their first night.

Thank God for the radio amateurs.

Yours faithfully,
Gordon H. Sanders VK2DGS

"Bonnie Brees", Wattlebonora, N.S.W. 2741
21st December, 1979

The Editor,
Dear Sir,

I am writing in support of Mr. R. J. Somerville's letter in December AR suggesting that past articles of an instructional nature should be made available in book form.

Having recently gained the AOCF after studying on a d-off for some years via the WIA course, which was until recently about the only guide as to the scope of knowledge required, I find that there seems to be a great lack of really comprehensive basic training material. To some this may seem strange, since there are many books of basic this and elementary that, but unfortunately most are trying to cover a complete radio course

in a couple of hundred pages or less — an impossible task.

Many may argue that it's all in the RSGB or ARRL Handbooks but to me they leave far too much reading between the line to be classed as satisfactory training texts. I would have hoped that the continual issue of new editions would have done much to remove those vague old explanations that have been rehearsed for many many years.

The ARRL is however to be commended for many of its other publications, an outstanding one of which is "Understanding Amateur Radio". This practical little book is a taste of what the Handbook should be and is an invaluable aid for AOCF candidates. Another fine book with a much fuller treatment of electronics but not radio is "Basic Electronics" by Grob.

Undoubtedly the best general text I have seen is "Electronic Communication" by Shrader. I thoroughly recommend this book to all such as myself who have not had the good fortune to be able to collaborate with someone trained in communications radio and have had to learn it all from books.

Judging from the number of novice calls filling up the callbook, there should be plenty of incentive for those better informed WIA members to go together and do something about the situation. I can think of no better way to justify those membership fees and enhance the reputation of the WIA at home and abroad than to put out a really worthwhile training textbook. Why leave it to the Yanks, they may have thirty times the numbers but they are thirty times as smart? Why not simply ask or offer a small incentive to members for submissions of suitable material — the results may be surprising. Remember, all those call signs have had to pass an exam.

Perhaps a good starting point for those contemplating doing something would be to give some credit to men like Galvani, Ampere, Faraday and Hertz, and to the scientific foundations for a massive part of the technology that has made our age unique.

I would also like to take this opportunity to thank those unsung heroes that have devoted their time and talents to produce the slow motion practice session. Without their help my AOCF would have been extremely hard to get. In terms of simplicity of acquisition, width of knowledge and communications effectiveness, CW still seems unchallenged. With this excellent service provided each night I wonder at that long list of limited calls. Is the modern amateur to be merely an extravagant CBER or someone with some knowledge and understanding of the privileges he enjoys.

The RF spectrum is a natural resource and with a sound standard of knowledge to indicate the genuine interest in radio. I see no reason to provide further evidence to justify our occupation of the amateur bands, especially since forward looking Governments should be looking at satellites and that massive undeveloped microwave segment for domestic and international communications.

Yours faithfully,

Graham L. Dun

5th December, 1979

The Editor,
Dear Sir,

I would like to strongly support the sentiments expressed by VK6ED in his letter in November AR.

Like VK6ED I am not interested in entering EITHER Phone OR CW. I wish to enter both and meet as many of my old friends as possible, a number of whom served with me during 1939-45. The abolishing of an Open section does appear to be influenced by the "Down with CW" group. I can still remember coming out of those days, amateurs, who later paid the supreme sacrifice, on CW during 1939-38 era, probably because I could not afford to go on phone anyway.

Other factors annoyed me regarding this year's contest. If one relied on AR for rules concerning the RD contest, it would have been difficult as my July copy of AR arrived on August 21st and having arrived back from overseas on August 6th I had no idea when the contest was to be held; I listened to the pre-contest broadcast from

VK2AWI and little significance was attached to the true meaning of the contest; the roll of honour in whose memory the contest is conducted, was not even read out, in fact, from what I heard, let us change the name of the Contest — say, "The Friendly Contest".

Might I suggest that in future years details are not left to the last minute — we could well have some strike to blame again for late advice of details — an outline be given of what the RD contest is all about, that an open section be included, that Novices be encouraged to enter the open section, even a low power section be encouraged.

We owe a lot to those amateurs — and many others — who died during the 39-45 conflict, let us remember them on this occasion each year and give those members who participate the opportunity to enter those sections and modes that give them most enjoyment. If they choose to have the minimum permissible contacts and put in a log (as I did this year) — good thing — if they want to go flat out for 24 hours for a large score (as I have done in the past) — all the better. But let us encourage and advertise the RD Contest.

Yours sincerely,

Jim Andrews VK2BO

8th December, 1979

The Editor,
Dear Sir,

ENDEAVOUR AWARD — ROYAL NAVAL
AMATEUR RADIO SOCIETY

Our award, the "Endeavour Award" has been given recently, thanks to AR, and I have been advised we have issued 52 awards since Easter. There have been a couple of minor changes to the rules of the award: to permit QSOs on VHF and to award double points for VK2BNR, HMAS NIMROD and also HMASR contests double points for the "Mercury Award" as do the two other stations operating from Naval establishments:— GB2NR/ GH4MS — HMS BELFAST and GB3NR/GB3ZU — HMAS MERCURY.

To gain an idea of the size of RNARS we are currently allocating numbers in the 1420 series.

We hope to gain a few more members and also interest a few YLs, especially those who were in the WRANS.

If anyone has a Creed transmitter for sale we would be grateful if you could let us know.

Terry R. Clark, VK2ALG, RNAS 1196,
Australian Branch Manager — RNARS
P.O. Box 537, Albury, N.S.W. 2640.

EDITOR'S NOTE: Please see "Awards Column" for the updated rules.

CONTESTS

Wally Watkins VK2DWF
Box 1065, Orange 2800

February:

10-10 John Moyle Field Day
16-17 ARRL DX CW Contest
23-24 French Phone Contest
23-24 RSGB 7 MHz CW Contest

March:

1-2 ARRL DX Phone Contest
9-10 Europe and Arice RTTY
22-23 BATTY RTTY Contest
29-30 CD WW WPX SSB Contest

April:

26-27 Helvetia Contest

May:

24-25 CD WW WPX CW Contest

ARRL DX Contests, full rules and specimen front sheet and log sheet available from FCM for \$A3E.
Watch for W2BKB/PJ7, CW and SSB on 10, 15 and 20 during March 10-24, 1980.

COMMONWEALTH CONTEST 1980 — "BERU" — RULES

TIME
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EMERGENCY SERVICES COMMUNICATIONS PROCEDURE

This issue we continue with the third part of the
Emergency Services Communications Procedure
Paper.

20. SIGNAL STRENGTH AND READABILITY

A station that wishes to inform another of its
signal strength and readability will do so by
means of a short and concise report of actual
reception such as "Weak, but readable", "Strong,
but distorted", "Loud and clear", etc. A station
desiring to know how its transmission is being
received will transmit "How do you hear me?"

21. SYNCHRONISING TIME

(a) When a net has been established, Control
should announce the time so all operators
can synchronise their watches. To do this
Control will say, for example:
"All stations THIS IS (Call Sign). When I say
time it will be exactly 1500 hours. 15 seconds
— 10 seconds — 5-4-3-2-1 — Time 1500.
OVER".

(b) Control will use the same procedure if a
request for the time is received from a sub-
station.

22. OFFERING MESSAGES

(a) An offer is a short transmission made to
warn the receiving station concerned that a
message follows. All messages will be offered.
The proword used in the exchange of calls
in the offer of a message are "MESSAGE"
or "LONG MESSAGE" or "UR MESSAGE".
"SEND"

(b) When the sending operator has a long mes-
sage he warns the receiving operator by
offering the message as a "LONG MESSAGE".

23. RECEIPTS

The transmission of a message is not completed
until the receiving station gives a receipt for it.
This is done simply by using the proword
"ROGER".

Example:
"VK1BAA THIS IS VK1BAC send vehicle for
mail — OVER".

"VK1BAA — ROGER — OUT".

24. TYPES OF CALL

There are three types of call which can be used
on a net. They are "Single, Multiple and All
Stations".

(a) Single Call: Used by Control to substation,
substation to control or substation to sub-
station.

Example: Control to substation (or substation
to control, VK1WI is control).

Control: "VK1BFA THIS IS VK1WI UR MES-
SAGE — OVER".

VK1BFA: "THIS IS VK1BFA — SEND —
OVER".

Control: "THIS IS VK1WI — fresh batteries
have arrived — OVER".

VK1BFA: "VK1BFA — ROGER — OUT".

Example: Substation to substation (Directed
Net).

VK1BFA: "VK1WI — THIS IS VK1BFA — UR
MESSAGE FOR VK1BFC — OVER".

Control: "THIS IS VK1WI — SEND — OUT".
VK1BFC: "VK1BFA THIS IS VK1BFC — SEND
— OVER".

VK1BFA: "VK1BFA — request loan of a new
battery — OVER".

VK1BFC: "VK1BFC — ROGER — OUT".

(b) Multiple calls: Used by Control to two or
more substations but not used when calling
all substations.

EXAMPLE:

Control: "VK1BFA, VK1BFB THIS IS VK1WI
UR MESSAGE — OVER".

VK1BFA: "VK1BFA — SEND — OVER".

VK1BFB: "VK1BFB — SEND — OVER".

Control: "VK1WI — Collect fresh batteries from
me — OVER".

VK1BFA: "VK1BFA — ROGER — OUT".

VK1BFB: "VK1BFB — ROGER — OUT".

(c) All Stations Call: Used by Control to all sub-
stations on the net. (All Stations on the Net
reply in alphabetical order.)

EXAMPLE:

Control: "ALL STATIONS — THIS IS VK1WI
— UR MESSAGE — OVER".

VK1BFA: "VK1BFA — SEND — OVER".

VK1BFB: "VK1BFB — SEND — OVER".

VK1BFC: "VK1BFC — SEND — OVER".

Control: ALL STATIONS — THIS IS VK1WI —

Have you received fresh batteries — OVER".

VK1BFA: "VK1BFA — YES — OUT".

VK1BFB: "VK1BFB — NO — OUT".

VK1BFC: "VK1BFC — YES — OUT".

25. SENDING A LONG MESSAGE

A long message is one of more than 30 words
of text. The following procedure is then adopted:

(a) The message will be offered, using the
proword LONG MESSAGE.

(b) It will be sent in sections.

(c) After about 15 groups, the sender confirms
progress by saying "ROGER SO FAR —
OVER".

(d) Receiving stations answer "ROGER" in turn
or, if necessary, ask for repetitions.

(e) After obtaining acknowledgements from all
receiving stations the sender pauses for five
seconds. This is to allow any other station
to transmit an urgent message.

(f) If there is no interruption the next section
of the message is transmitted.

This procedure is continued until the message
is cleared.

EXAMPLE:

VK1BFC is sending a LONG MESSAGE to VK1BFX.
He sends it in two sections.

VK1BFC: "VK1BFX — THIS IS VK1BFC — LONG
MESSAGE — OVER".

VK1BFX: "THIS IS VK1BFX — SEND — OVER".

VK1BFC: After sending the heading of the mes-
sage says:

"BREAK — following accommodation stores re-
quired — by one six hundred hours today —
stop — blankets figures five hundred — stretchers
figures two five zero — ROGER SO FAR OVER".

VK1BFX: "VK1BFX — SAY AGAIN WORD AFTER
Accommodation — OVER".

VK1BFC: "VK1BFC — I SAY AGAIN WORD
AFTER Accommodation stores — I SPELL — Sierra
Tango Oscar Romeo Echo Sierra — stores —
OVER".

VK1BFX: "VK1BFX — ROGER — OVER".

VK1BFC pauses for 5 seconds to allow any sta-
tion with urgent traffic to call in.

VK1BFC goes on sending the rest of the mes-
sage:

"VK1BFX — THIS IS VK1BFC — pillows figures
two five zero — cutlery sets figures two five zero —
cooking sets zero Delta figures two — MES-
SAGE ENDS — OVER".

VK1BFX: "VK1BFX — ROGER — OUT".

26. WORDS TWICE PROCEDURE

When communication is difficult, call signs,
phrases, words, or groups are transmitted twice
and indicated by use of the proword "WORDS
TWICE". Reception may be verified by use of
the proword "READ BACK".

EXAMPLE A:

VK1BFX: "VK1BFC — VK1BFC THIS IS VK1BFX
VK1BFX — UR MESSAGE — UR MESSAGE —
OVER — OVER".

VK1BFC: "VK1BFX — VK1BFX — THIS IS
VK1BFC — CK1BFC — SEND — SEND — OVER
— OVER".

VK1BFX: "VK1BFC — VK1BFC — THIS IS
VK1BFX — VK1BFX — WORDS TWICE — WORDS
TWICE — PRIORITY — PRIORITY — TIME ONE
TWO TWO ONE SIX THREE ZERO — TIME ONE
TWO ONE SIX THREE ZERO — BREAK — BREAK
— CONVOY has arrived — Convoys have arrived —
over — over".

VK1BFC: VK1BFX — VK1BFX — THIS IS VK1BFC — VK1BFC — SAY AGAIN — SAY AGAIN — WORD AFTER BREAK — WORD AFTER BREAK — OVER — OVER".

VK1BFX: "VK1BFC — VK1BFC — THIS IS — I SAY AGAIN — I SAY AGAIN — WORD AFTER BREAK — WORD AFTER BREAK — convey — convey — over — over".

VK1BFC: "VK1BFX — VK1BFX — THIS IS VK1BFC — VK1BFC — ROGER — ROGER — OUT — OUT".

EXAMPLE B:
The text consists of code groups.

VK1BFX: "VK1BFC — VK1BFC — THIS IS VK1BFX — VK1BFX — WORDS TWICE — WORDS TWICE — PRIORITY — PRIORITY — TIME One Two Zero Eight One Alpha — BREAK — BREAK — Alpha Mike Lima Quebec Delta — Alpha Mike Lima Quebec Delta — Romeo Oscar Charlie Zulu Yankee — Romeo Oscar Charlie Zulu Yankee — etc. — OVER — OVER".

VK1BFC: "VK1BFX — VK1BFX — THIS IS VK1BFC — VK1BFC — ROGER — ROGER — OUT — OUT".

27. REPETITIONS

When words are missed or are doubtful, repetitions are requested by the receiving stations before saying ROGER. The pword "SAY AGAIN" is used alone or in conjunction with "ALL AFTER", "ALL BEFORE", "TO", "WORD BEFORE" is used for this purpose. In complying with requests for repetitions, the transmitting station will identify that portion which is being repeated.

EXAMPLE:
VK1BFC has been told to "SEND" by two stations for whom he has traffic. He then says:

VK1ABA — VK1BFB — THIS IS VK1BFC — TIME ZERO Eight One Zero Five Two — FROM BRAVO Foxtrot Charlie — To — Bravo Foxtrot Bravo — INFO — Bravo Foxtrot Alfa — BREAK — FROM — Zero Eight One Seven Zero Zero — FIGURES One Thousand — blankets — for BRAVO Foxtrot BRAVO — arrive Murrundi railroad — STOP. Blocks on ACK — MESSAGE ENDS — OVER".

VK1ABA having missed "BREAK" to "THOU-SAND" transmits:

VK1BFC — THIS IS VK1ABA — SAY AGAIN — BREAK to thousand — BREAK — to Zero Eight One Seven Zero Zero — FIGURES One Thousand — OVER".

VK1ABA now having received the message satisfactorily transmits:

"VK1ABA — ROGER — OUT".

VK1BFB having received the message satisfactorily transmits:

"VK1BFB — ROGER — OUT".

28. CORRECTION DURING TRANSMISSION

When an error is made by a transmitting operator, the pword "CORRECTION" is transmitted followed by the last word, group, pword or phrase correctly transmitted. Transmission then continues.

EXAMPLE A:

VK1BFC: "VK1BFX — THIS IS VK1BFC — TIME One Two Zero One Five — CORRECTION — TIME One Two Zero One Five Five — OVER".

VK1BFX: "VK1BFX — ROGER — OUT".

EXAMPLE B:

When an error in transmission is discovered and the transmission is concluded, the word, group, pword, or phrase must be properly identified and the correct version given.

VK1BFC: "VK1BFC — THIS IS VK1BFX — TIME Zero Six Three Zero — BREAK — Convey will arrive — supplies will be available — CORRECTION — TIME — Zero Six Four Zero — OVER".

VK1BFC: "THIS IS VK1BFC — ROGER — OUT".

29. CANCELLING MESSAGE DURING TRANSMISSION

During the transmission of a message and prior to the transmission of the ending pword "OVER" or "OUT", the transmission may be cancelled by use of the pword "DISREGARD". A message which has been completely transmitted may be cancelled only by another message.

EXAMPLE:

During the transmission of a message, station BFX discovers that the transmission is in error and

cancels it by transmitting the pword "DISREGARD".

VK1BFC: "THIS IS VK1BFX — ROUTINE — TIME Zero Six Three Zero Three Five — commence unloading at dawn — sixteen — proceed — DISREGARD — OUT".

30. READ BACK

If it is desired that a message or a portion thereof be read back, the pword "READ BACK" and identify data will be transmitted immediately following the call.

EXAMPLE:

VK1BFX: VK1BFC — THIS IS VK1BFX — READ BACK text — TIME One Six One Two Three Zero — BREAK — convey has arrived — OVER".

VK1BFC: "VK1BFC — I READ BACK text — convey has arrived — OVER".

VK1BFX: "VK1BFX — CORRECT — OUT".

Note: When READ BACK is employed, the pword ROGER is not necessary to indicate receipt of the message.

VK1BFX: "VK1BFX — ROGER — OUT".

(To be continued) ■

YOU and DX

Mike Bazley VK6HD

8 James Road, Kalamunda W.A. 5075

The past decade has been good to the DX chaser. True we have seen a sunspot minimum with poorer conditions on the HF bands, though I wonder how many are aware of the DX activity of the past ten years? Looking at the present DXCC list nearly all the countries listed have been active. The only notable exceptions this writer is aware of were: BY, YZ, V59K and 70. How many did you miss out on? One thing should be fairly certain, those countries which have not been activated during the past ten years stand a reasonable chance of being so during the next ten years. Something to look forward to.

List operations cause a lot of ill-feeling on the DX bands particularly if you need that country and you are sure he would like to work a VKI One of the main causes of annoyance is that one is never told how to get onto the list in the first place. Full marks must go to the DM gang who organise the lists for TN8AJ, who is QRV every Saturday from 1400Z on 21155. The list is taken from about 1410/15Z a few kHz from the TN8B frequency. During the time the list is going through one of the DM master of ceremonies will regularly state on the frequency when and where the next list will be taken. This approach certainly solves a lot of QRM problems and reduces blood pressure!

DX NEWS, RUMOURS, FACT AND FICTION

One of the problems of Christmas is that copy for this February issue has to be in the hands of the publishers early therefore only a short time has elapsed since pen was last put to paper. Fact it is worth, let's dispense with some of the rumours first. Those, like me, who still need SA may take some comfort in the rumour that a group of European DXers will be trying to activate this one for the WPX SSB contest. Also talk has been heard on the air of possible 70 operation by a group of QSLs. Finally don't write off the chance of some XZ operation, rumour has it that VE3FXT is still trying for that one.

Even VK3ANI advises that JWSFD is active from Bear Island, which is in the Svalbard Group. This station is scheduled to be active until June 1980. The antenna at present is only a dipole but plans are in hand for a beam. The station was heard on 14 MHz SSB from 1900-2000 GMT.

The "DX Bulletin" advises that on-the-air Bulletins will be made by WJURV at 1500 GMT on Mondays, frequency 1400Z. Need to brush up the CW for this one.

Those of you chasing WAZ or SBWAZ and looking to QSO UOY on one of the bands should direct their QSLs via UK0AAA. This station must have run up an enormous QSO total as it was active for over six weeks and this period covered both the phone and CW contests. The station was re-

ported as having QSO'd VK on all bands except 160m. A7XA and A7XB are both active at present, usually found on 28550/28620 from 0900 GMT at weekends.

LUTX, who was active during the CO/CW contest was operating from Staten Island, QSL via LUSEF.

The NZKK Expedition has been held up due to problems in obtaining the necessary visas and licences. By the time this is being read the Expedition should be under way.

There are quite a number of VU stations active on 80 metres. VU2DPK and VU2BX have been reported on SSB and this writer has recently QSO'd VU2JH on CW.

604LS recently caused a stir on the 15m band. If you worked him I regret to tell you that he was operating from aboard the Panamanian ship "Judy" in Mogadishu harbour.

Did you miss the 3C1 Expedition? Well take heart 3C1AC, who is a TV technician, is active on 14, 21, 28 SSB. QSL via EA7FY.

D8BAM, Alain is being heard again on 14 and 21 SSB. QSL via Box 501, Moroni, Grande Comore.

100 Moscow stations and 25 stations from each city where the Olympic Games are to be held will use special prefixes from Jan. 1 to Aug. 3. UA stations with 2 suffix letters will use RX, those with 3 suffix letters will use RZ, UK stations will use RK, UV RV, UW RW, UG RZ, UR2 RU2, UB5 RZ5, UT5 RT5, UY5 RY5. From July 1 to Aug. 3 special station RM30 will be QRV from Moscow, RT20 from Tallinn. From July 15 to Aug. 3 special station RL10 will be QRV from Leningrad, RK50 from Kiev, RM20 from Minsk. An Olympiad-80 Award will be available for a maximum of 40 points as follows: 5 points each for working RM30 RT20 RK50 RM20, 1 point for working other special prefix stations, 1 point for working all stations from Oblast 170. One QSO per station. Send log data plus your QSLs for the USSR stations worked to P.O. Box 88, Moscow.

N4HX/TT8 is reported active from Tchad. He has been worked/heard in VK on 14, 21 and 28 SSB. QSL via ON5KT, P.O. Box B-8880 Aalter, Belgium.

Well, that's the lot for this month. Thanks to G. Watts News Sheet and VK3ANI, VK4KX, VK6AJ, VK6LK and L36853.

73 as DX Mike, VK6HD

QTHs YOU MAY HAVE MISSED

A7XB — via DJ9ZB
A9XCV — Box 14, Manama Bahrain
CSACV — via W641B
CT2QN — via W2CF
F8BAA — via K2RW
H82BM — via W7RQ
HK0BFF — Box 133 San Andres Island
HP1XOJ — via WB3KG
HK0EFU — via K4TXJ
HZ1AA — via K8PD
JW5FD — via Z5AMN
KH6G/KH9 — via KHJOU
OY9J — via K2JL
S2BTF (for non W QSOs) — via LASNW
TGGI — via KHV
N4HX/TT8 — via ON5NT
THAAG — via F8FF
T42ON — via Z860N
VK0KH (Macquarie) — via VK5UW
VP1KS — via DL1KS
VP2EY — via W3HKN
VP2SAX — via Y4SME
VP8SU — via G3ZCA
VP8YU — via G4CHD
VK1AB — Box 51 Managua
ZL5AC — via ZL2VF
3C1AA — via EA4MY
5T5JD — P.O. Box 477 Nouakchott
N2RM/SYS — via N2MM
9Y4DR — via KA2RFX

QSP

CONGRATULATIONS

To Mr. E. J. Wilkinson ISO, upon being elected President of the IREE Australia for 1979-80 as announced in the Dec. '79 issue of "Monitor". ■

SIDE BAND ELECTRONICS ENGINEERING

P.O. BOX 23, SPRINGWOOD, N.S.W. 2777
WAREHOUSE 213 HAWKESBURY RD. SPRINGWOOD
TELEPHONE (047) 54 1392

Overseas prices again show an upward trend. If you are in need of new equipment it makes sense to purchase now. Prices must increase once current stocks are sold. How about KENWOOD transceivers at the right price, or a YAESU FT-1011Z fitted with fan at \$850 -, HENRY linears \$850 - and \$1050 -, TH6-DXX \$300 -, 18-AVT/WB \$110 -, Rotators, cables and Co-ax connectors all at the right price. Check and compare our prices with others before you buy!

HENRY RADIO — A Famous Brand —

NEW LINEAR AMPLIFIERS —

2KD-5 — 2KW PEP, 80 - 10m SSB/CW/RTTY/AM	
	\$1050
1KD-5 — 1200W PEP, 80 - 10m SSB/CW/RTTY/AM	
	\$850

GAIN ANTENNAS

TH6-DXX 10-15-20M, 6-el. yagi.....	\$300
18-AVT/WB 10-80M vertical.....	\$110
204-BA 20M, 4-el. Tiger array.....	\$220
BN-86 balun for beam buyers.....	\$20
HY-Q (USA) 50-ohm 1KW balun.....	\$15

ROTATORS & CABLES

All rotators now come with bottom brackets and control-indicator boxes wired

KEN KR-400 medium duty.....	\$120
KEN KR-500 vertical rotator.....	\$140
KEN KS-065 stay/thrust bearing.....	\$25
CDR BT-1A light duty 4 position push button programmable. Plus normal operation 120V AC.....	\$85
CDR am III heavy duty 120V or 28V AC.....	\$178
CDR tail-twister extra H/D120V or 28V AC.....	\$225
RG-8U foam coax cable, per metre.....	\$1.00
8-cond. rotator cable, per metre.....	75c

ACCESSORIES

Voltage regulator 18V AC Input, 12V DC 3A output	\$18
240/18V AC transformer	\$1C
Mobile bumper mounts 3/8" 24 thread	\$2

KYOKUTO FM-2016A

800 channel, 2 meter FM transceiver with 4-channel memory and scanner 15W.....	\$355
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TRIO-KENWOOD PRODUCTS

VFO 520 for TS 520S.....	\$130
LF 30A low-pass filter.....	\$30
SP-120 (TS-120 series) SP-100).....	each \$32
DK 520 adaptor TS 520 to DG 5.....	\$10

All further Trio-Kenwood accessories and transceivers at competitive prices.

YAESU MUSEN PRODUCTS

FT-1012D 10-16M digital transceiver w/cooling fan fitted.....	\$850
SIDE BAND brand microphone to suit.....	\$10

CO-AX CONNECTORS

PL-259, SO-239, cable joiners, each.....	60c
Right angle and T-connectors, each.....	\$1.00
GLP right angles RG-58U to SO-239, w/lock nut and cap, each.....	\$1.50
Double female connectors, each.....	60c
MLS right angles RG-58U to PL-259, each.....	75c
In-line mike sockets 3 & 4 pin, each.....	60c
Mike sockets 3 & 4 pin, each.....	60c
M-ring body mount w/lock-nut.....	\$1.50

NOVICE SPECIALS-TRANSCIVERS

10M sideband SE-502 USB/AM 15W PEP-240V AC, 12V DC, inbuilt SWR/RF meter, 28.3-28.6 MHz clarifier tuning transmit and receive.....	\$80
10M Universe 224-M, USB/AM, 15W PEP 12V DC, 24-ch. 28.480 to 28.595 MHz, 5-Khz steps-clarifier tuning transmit and receive.....	\$85
CONVERSION CRYSTALS for amateur licence holders - set of 8 crystals to convert 23-ch, 27-MHz CB units to 28 MHz. Suitable for Kraco, Sideband, Universe, Hy-range V etc., converts as per Universe 10M above — CRYSTALS & INSTRUCTIONS.....	\$32
Set of 4 crystals converts to 28.3-28.6 MHz.....	\$15

All prices are NET, ex Springwood NSW, on pre-payment with order basis. All risk insurance is free of charge, allow for freight charges by air, road, rail or postal, excess will be refunded. Prices are subject to change without prior notice. All orders cleared on a 24-hour basis after receipt of order with payment.

ROY LOPEZ (VK2-BRL) Manager

AWARDS

COLUMN

Bill Verrall VK5WV

7 Lilac Ave., Flinders Park, S.A. 5025

WORKED GERMAN LARGE CITIES AWARD

This award is available for working stations in West Germany. It is available in three (3) classes and there is no restriction on the mode used. No band endorsements are made as more than one band may be used in qualifying for the award. Each city may be listed once only in the claim. The three classes are:—

Class	DX Stations
3	10 Cities
2	20 Cities
1	30 Cities

QSLs are not required for this award, but a list certified by two other radio amateurs or an officer of a National Radio Society should be submitted together with 10 IRCs. The Award is also available to SWLs on a "Heard" basis.

Claims should be sent to: Karl-Heinz Kummerle, DL2JB, 694 Weinheim, Postfach 23, Germany.

German Large Cities are: Aachen, Augsburg, Berlin, Bielefeld, Bochum, Bonn, Bottrop, Braunschweig, Bremerhaven, Darmstadt, Dortmund, Düsseldorf, Duisburg, Essen, Frankfurt/Main, Freiburg, Gelsenkirchen, Göttingen, Hagen, Hamburg, Hannover, Heidelberg, Hellbrunn, Herne, Karlsruhe, Kassel, Kiel, Koblenz, Köln, Krefeld, Leverkusen,

Ludwigshafen, Lubeck, Mainz, Mannheim, Monchengladbach, Mulheim/Ruhr, München, Münster/Westf., Neuss, Nürnberg, Oberhausen, Offenbach/Main, Oldenburg 1, Osnabrück, Recklinghausen, Regensburg, Rheinfelden, Saarbrücken, Salzgitter, Solingen, Stuttgart, Trier, Ulm, Wanne-Eickel, Wiesbaden, Wilhelmshaven, Witten, Würzburg and Wuppertal.

"100 X" AWARD

This award is issued by the Mexico DX Club to licensed radio amateurs and SWLs for confirmation of QSO with stations that have in its call sign one or more "X" letters (XE1OW, W4LX, EA3AX, I2XYZ, etc.).

To apply for this award you must have at least 100 points.

Each letter X of stations of any country outside Mexico counts 1 point.

Each letter X of Mexican stations counts 2 points.

Each letter X of Mexico DX Club members counts 3 points.

QSO with the club station of the Mexico DX Club "XE1MDX" counts 10 points.

Only contacts after January 1st of 1973 are valid.

Application and QSL cards must be sent to P.O. Box 21-167 in Mexico City 21.

For safe return of the QSL cards and award, please include 15 IRCs (for 3 dollars U.S.A.).

CENTRAL COAST AWARD (VK2)

The Central Coast Amateur Radio Club issues an award to stations who meet the following requirements:—

1. Overseas Stations:

Overseas stations must work Two (2) stations

resident on the Central Coast of N.S.W. OR one of the Club stations VK2EH or VK2AFY.

2. VK Stations:

VK stations must work Four (4) stations resident on the Central Coast of N.S.W. plus either of the Club stations VK2EH or VK2AFY.

3. Central Coast of N.S.W. Stations:

Central Coast stations must work Ten (10) stations resident on the Central Coast of N.S.W. plus either of the Club stations VK2EH or VK2AFY.

4. The Central Coast of New South Wales is defined as that area within the Shires of Gosford and Wyong.

5. After the necessary number of stations have been worked send a copy of the log extracts to:

The Awards Manager, P.O. Box 236, Gosford, N.S.W. 2250, Australia.

After verification of the QSOs the Award will be issued.

Good Hunting.

UPDATED ENDEAVOUR AWARD RULES

(See also AR, February 1979 and July 1979)

Rules

1. The name of the award shall be the "ENDEAVOUR AWARD" and shall be open to all radio amateurs and short wave listeners.

2. Applicants must establish two-way amateur communications with RNARS Members residing in Australia. SWLs must monitor Australian RNARS Members.

3. Points will be awarded on the basis of one point per VK RNARS Member worked/heard per band, regardless of mode. Only contacts after January 1st 1979 will count towards the award. Contacts on the VHF bands will count double points. All contacts with HMA5 NIPINMA club station, VK2BNR, count double. To qualify the following is required:—

For amateurs/SWLs residing inside Australia — 15 points.

For amateurs/SWLs residing inside Oceania — 10 points.

For amateurs/SWLs residing outside Oceania — 5 points.

In addition, for amateurs residing outside Oceania, contacts with VK RNARS Members on the 3.5 MHz band will count double points. For the purposes of this award, any RNARS Maritime Mobile Member when located inside Australian waters may be counted as a VK Member.

4. The Award will be endorsed ONLY at the request of the applicant and the following endorsements are available:


ALL CW — ALL SSB — ALL NOVICE — ALL 3.5-MHz — ALL 28 MHz — ALL VHF — FIVE-BY-FIVE. The last endorsement being for gaining at least five points on each of the five high frequency bands.

5. A special sticker is available to add to existing certificates for gaining 100 POINTS. However, any previous MODE endorsements on the original must hold true for all 100 points, or a second award claim for mixed mode must be made. The sticker is issued free of charge to existing award holders. A BASE or 2 IRCs would be appreciated to cover return postage.

6. To claim the Award, no QSLs are required. Full log details showing the VK member (or /MM+QTH) claimed, their RNARS number, date, time, frequency, mode, plus an application fee of \$1.50 Australian or 7 IRCs are to be sent to the Endeavour Award Custodian:—

Mr. R. Bate, 43 HMA5 Australia Road, Henley Beach South, SA 5022, Australia. Please ensure all cheques are in Australian currency and made payable to "R. Bate". Clearly state what endorsements are claimed. Certificates to successful applicants will be forwarded by airmail.

Join the IW net at 2300Z on Thursdays on 14165 kHz when you have intruder information.



THE CENTRAL COAST AWARD

Presented by

Central Coast Radio Club

WHO HAS MADE RADIO CONTACT WITH THE REQUIRED NUMBER OF AMATEUR RADIO OPERATORS WHO ARE MEMBERS OF THE CENTRAL COAST RADIO CLUB

Award No. _____

Stations Contacted _____

Date _____

President _____

CENTRAL COAST - THE HOLIDAY COAST

The Central Coast, which has been called the Holiday Playground of two cities, embraces more than 125 square miles of the finest and most varied scenery. The area has a great diversity of interests including 30 of the most beautiful beaches in the State, more than 100 square miles of shalldree lakes, mountain lookouts and scenery, heavily-forested forests and more than 300,000 acres of wonderful national parks and reserves. The Central Coast is a water wonderland controlled by the Shire Councils of Gosford-Wyong. Gosford is the hub of the coast and the terminus of a fast and modern electric train service from Sydney. Situated midway between Sydney and Newcastle, 90 miles from each, with excellent shopping facilities and a population of 78,000, it is a wonderful area in which to live or spend a pleasant holiday.

The Central Coast Radio Club — operating station VK2AFY — is a branch of the Wireless Institute of Australia which is the oldest amateur radio organization in the world.

This Award has been sponsored by The Central Coast Tourist Authority

The Central Coast (VK2) Award

ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

Results of the elections which were held at the Annual General Meeting of ALARA: President — Heather Mitchell VK3AU, Vice President — Raeli Fowler, Secretary — Laurel Coolidge VK3ANL, and Treasurer — Mavis Russell VK3BIR. Last year's officers were given thanks for the work they did and the time they contributed. The group gave special thanks to Mavis VK3BIR for all the contributions in time and energy she has made this past year to amateur radio and ALARA.

The next meeting of ALARA will be held at the home of Mavis Stafford VK3KS, 16 Byron Street, Box Hill, on 9 February, 1980. There is no meeting in January.

YL ACTIVITY DAY

Aims: For YLs to meet and get to know other YLs without contest pressure, to have more personal QSOs than occur in a YL net, and to help OMs who may need a quick contact for a YL award.

Date: the 6th day (GMT) of every month.

Frequencies: 3.688, 7.088, 14.288, 21.188, 21.388, 28.688 MHz ± QRM.

Times: on the hour, every hour. If you don't hear any YLs, please call CQ YL.

(Thanks to Diana G4EZI for this information.) ■

CAMEO OF MAVIS RUSSELL VK3BIR, PRESIDENT OF ALARA, 1979

Mavis has had her full call for 2½ years now. She became interested in amateur radio when her husband, Earl VK3BER, received his ticket. She took a correspondence course, but her interest waned. Mavis had heard about the formation of ALARA on the WIA broadcasts, but it was the ALARA ad on 80m that really piqued her curiosity. So, in July 1975, she took classes at the Eastern and Mountain District Radio Club. In 1977, she received the news that she had passed the full call exam. Mavis remembers that it was a "tremendously exciting moment", and it was followed by much celebrating.

Since then, Mavis has been active in many aspects of amateur radio. She has participated in WICEN activities, in particular the canoe race on the Murray. She was on the steering committee of the Frankston and Mornington Peninsula Amateur Radio Club and has been on various committees since its inception four years ago. Presently she is the QSL manager for the club.

Her involvement with ALARA began with the heads and the monthly meetings in 1975. In 1979 she served as President. Her efforts have brought forth the ALARA Award, newly printed but not yet publicised, and an expanded membership base. She wants to have more YLs involved in the sked (Mondays 1030 BMT 3.56 MHz ± QRM). With the help of State Co-ordinators, she has been experimenting with moving it into the novice section in the hopes of fuller participation.

Mavis enjoys working DX and has worked the 100 countries needed for the DXCC but has yet to apply. Her goals for the coming year are to improve her CW and to get involved with satellite operation. In fact, the whole family is interested in satellites. Mavis says that one of her sons, aged 18, will be sitting for his novice exam in February. That may result in competition for the use of the rig, with three amateurs in the household.

Mavis is quite active on SSR, especially on 20m and 2m. Early in the morning before work, she can be heard on 10m, sometimes chatting with Erin YJENEM. It was her on air friendship with Erin that helped Mavis travel to Port Vila and operate there with YJ8 call last October. Her special QSL cards have been printed and are being posted.

The Victorian Division held a pre-Christmas picnic in Woodend at the home of Janet VK3BTU. Among those attending were Norma VK3JAYL and Frank VK2AKG, who were married only a week previously. Congratulations and best wishes to the

both of you! Norma was the foundation president of ALARA in 1975.

YLRL, ALARA's sister organisation in the US, celebrated its 40th birthday. A YL Anniversary Contest was held and a few VK YLs participated. No news yet about the results.

YL Activity Day is the 6th of every month. Look for YLs on the hour, every hour, at the following frequencies: 3.688, 7.088, 14.288, 21.188, 21.388, 28.688 ± QRM. Geraldine VK2NOI and Helene VK2HD did call "CQ YL" last month but they were unsuccessful in making contacts. Mavis VK3KS hopes to give it a try next month when repairs to her antenna should be completed.

If you are a YL and would like to join ALARA, the only requirement is an interest in amateur radio. For more information, please contact the Secretary, Box 110, Blackburn, Victoria, 3130.

Maggie VK3NRR

INTRUDER WATCH

All Chandler, VK3LC

FEDERAL INTRUDER WATCH CO-ORDINATOR REPLACEMENT

As denoted in November AR I have relinquished the position of Federal IW Co-ordinator, and have been fortunate in finding a replacement.

Graham VK3NXL is your new Co-ordinator as from January 1980, and it is very fitting that a Novice should take over the co-ordination.

With the conclusion of WARC 79 there is a completely new era commencing for Amateur Radio as a whole, and for Australian Amateurs, too. With the above in mind I am of the opinion that the IW should be handled by new and enthusiastic members, and Novices fall into that category. The old-timers have done a very good job in the past and it is up to the newcomers to do likewise in the future. The future destiny of Amateur Radio is in their capable hands.

Co-ordinators as at the time of writing are —

VK1NBG R. Chorley, 42 Gouger Street, Torrens 2607.

VK2AFG Les Weldon, 11 Raymond Avenue, Northmead 2152.

VK3 —

VK4NMJ Gordon Loveday, "Aviemore", Rubysvale 4702.

VK5LG Leith Cotton, 64 Werocra Avenue, Parkholme 5043.

VK6WT Dave Couch, 9 The Grove, Wembley 6014.

VK7NJC Jeff Cordell, 323 Lenah Valley Road, Lenah Valley 7008.

VK8HA Henry Andersson, PO Box 1418, Darwin 5794.

Federal, VK3NXL Graeme Fuller, PO Box 156, Healesville 3777.

All Chandler VK3LC,

IARU Region 3 IW Co-ordinator.

INTERNATIONAL NEWS

H44

A note has been received about the formation of a new society in the Solomon Islands, SIRS, the S. Island Radio Society. The inaugural general meeting was held on 10th October 1979, and a call sign — H44S1 has been obtained. The President is H44DX and Dr. G. W. Hughes is the Secretary. The address is P.O. Box 418, Honiara, Solomon Islands which also serves as their inward QSL bureau address.

RECIPROCAL LICENSING

Details were published in AR, Jan. 1978, p.25. ■

MAGAZINE INDEX

Ray Hartcopl VK3AOH

From this issue onwards it is proposed to make some alterations to the Magazine Index Department of AR. The title of an article can often be misleading and it is disappointing if one goes to a page of trouble to hunt up a magazine and then find that the article has — for instance — no constructional information. Therefore it is proposed in future to add a key letter to the various titles listed: G for general; C for constructional; P for practical where there are no actual constructional details; T for theoretical and N for anything of particular interest to the Novice. Any comments from readers as to whether they find this new format helpful would be greatly appreciated.

73 MAGAZINE August 1979

Converter for 2 GHz TV Channels (P); History of Ham Radio (G); The Totted J, Weatherproofed Antenna (P).

September 1979

History of Ham Radio (G); Remote Control for the IC22S (P).

RADIO COMMUNICATION June 1979

Improving the FT101 (C).

August 1979

CMOS Keyer with Memory (C).

CQ August 1979

The People's Temple Net (G); Foreign Morse Codes (G, N).

October 1979

DX World Records (G); Crystal-transistor Tester (C, N).

HAM RADIO July 1979

UHF Local Oscillator Chain (C); 40 Metre Beverage Antenna (C); Test Equipment Mainframe (C).

August 1979

12V 10A Power Supply (C); Ground Systems (G).

OCT June 1979

AR in Tonga (G); 5/8 2 Metre Antenna (C).

September 1979

Printed Line Techniques for VHF (C, G); Ionospheric Ducting (G); Mono-Loop Delta Antenna (C).

These are a few highlights. More next time. ■

QSP

CB AGAIN

According to reports in CQ for October 1979 Japan has recently approved a CB service which will operate in a band consisting of 110 channels. Channel 1 is identical to that in the USA CB service, with the highest channels extending to just under the 10 metre amateur band. ■

USA REPEATERS

How many amateur repeaters are there in the U.S.A.? ARRL Repeater Directory lists 4872 in 1979, which excludes some private and closed repeaters mainly in the 70 cm band. There were 3438 on 2 metres, and 728 on 70 cm, with others on 10 (36) and 6 (193) metres, 220 MHz (446) and 1215 MHz band (7) and 24 ATV repeaters. If the growth rate continues there would be over 10,000 in 1982—OCT July 1979. ■

VALVE (TUBE) PROBLEMS

Writing in Technical Topics in November 1979 Radio Communications Pat Hawker quotes the growing scarcity (and consequent rising cost) of many once-familiar valve types now that new TV receivers (the last mass market for valves) are virtually entirely solid-state. Some valves for TV sets, not being designed for RF applications, may or may not neutralise satisfactorily depending on the make. Inter-electrode capacitances seem to vary widely between different brands of the same valve type, e.g. 12BY7A. ■

AROUND THE TRADE

ICOM RELEASES MICROPROCESSOR 2m RIG

Following the tradition of the earlier IC211 2 metre multi-mode transceiver, the IC251A has improved performance and facilities, apart from introducing new power supply technology. In common with the 6m version, a pulse type (50 kHz) power supply is used on AC allowing a reduction in weight and heat.

Using micro computer control, a multi-purpose scanning facility allows monitoring of three different memory channels, a program scan giving scanning between two programmed frequencies, and an adjustable speed that stops scanning when a signal is received — on all modes!

Continuous coverage over the complete 2m band is provided with either 1 kHz steps on FM or 100 kHz steps on SSB, with a fast tuning facility also provided.

Further details and prices are available from Vicom at their Melbourne and Sydney addresses or their interstate representatives. ■



CW Electronics, Brisbane, has commenced selling and distributing a range of morse code and/or RTTY interfaces for the Commodore PET computer. These components are marketed under the brand name Macrotronics and are imported from USA.

The interfaces link the worlds of the computer enthusiasts and amateur radio operator.

The Macrotronics M650 interface comes complete with relevant software cassette. The manufacturers claim the interface offers a number of interesting features:

- Split screen display with the top six lines for the transmit buffer, middle two showing actual characters transmitted to air and bottom twelve displays the incoming signals.
- Message library functions, you could record the RTTY news service for future reference. The interface offers Auto CWID, eight message memories and enables you to send UTC at a push of a key.
- Select ASCII at 110 Baud or Baudot at 60, 67, 75, 100 w.p.m.
- Other features include word orientated editor, instant replay, auto transmitter control from the keyboard plus more.

If you require to drive a model 15 teletype simultaneously then there is a Macrotronics MK1 Loop Keyer module or with a FT101Z a MSK1 Solid State Keyer module to handle the reed relay keying.

The M65 ham RTTY/more interface is also available which offers phase locked loop demodulator, LED tuning indicator, built-in side tone oscillator, auto time sending, ten message memories and a morse code trainer.

The RTTY enthusiast's Macrotronics FSD-1 RTTY modulator uses a phase locked loop demodulator and provides RS232 output. It allows reception of 170 Hz or 850 Hz shift RTTY signals at the flick of a switch. Tuning is achieved by an 0-1 M meter that is supplied.

Owners of TRS 80 or Sorcerer computers can easily use some of the range.

For further information contact CW Electronics, Cnr. Marshall Road and Chamberlain Street, Tar-ragindi, Brisbane, Qld. 4109. Tel (07) 48 6601. ■



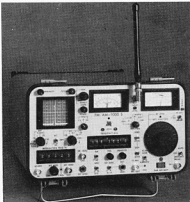
Nigel Sheppard (l) and Brian Beamish (r) discuss the Commodore PET.

NEW COMMUNICATIONS MONITORS

Instrument Flight Research (IFR Inc.) have released, through their newly appointed agents, Vicom International Pty. Limited, Professional Products Division, their communications monitor FM-AM 1000A and FM-AM 1000S. The instrument covers 100 Hz-999.9999 MHz as a generator and as a receiver 300 Hz-999.9999 MHz with accuracy quoted as 1×10^{-4} ppm. The instrument covers all functions as standard, this includes spectrum analysis (B Model), audio synthesis, two tone generation, BFO for single sideband measurements, power measuring to 100 watts and field strength measurements as well. Indeed, all modes of measurement are available at the flick of a switch.

The instrument is powered by mains voltage (either 240V AC or 110V AC) or by its own built-in Nicad battery pack. Because the instrument is small and light it is well suited to field operation.

Further information and specifications may be obtained from the authorised Australian agents, Vicom International at 68 Eastern Road, St. Melbourne, Phone (03) 699 6700 or 339 Pacific Highway, Crows Nest, Phone (02) 435 2766. ■



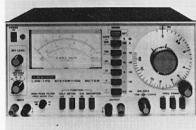
IC225 MAKES 2k

Over 2000 units of the current Icom ICOM IC225 2m FM transceiver have been sold in Australia, according to the distributors, Vicom International Pty. Limited. This is in addition to the popular IC22A and IC20 series. ■

LEADER LDM170

As part of the vast range of Leader test equipment, Vicom International are pleased to announce the release of their noise and distortion meter (model LDM170).

The instrument is available from Vicom International Pty. Ltd. and distributors. ■



DAIWA RELEASE NEW SPEECH PROCESSOR

Daiwa Corporation have released the new model RF660 RF Speech Processor designed for amateur radio transceivers.

The retail price is \$109 and it is available from the Australian distributors, Vicom International Pty. Ltd., 68 Eastern Road, South Melbourne.

The RF660 is shown below with the popular Kenwood TS120V. ■



DIVISIONAL NOTES

VK2

34th URUNGA CONVENTION AND FIELD DAY, EASTER 1980

April 4th, 5th and 6th

Friday 4th: 2000 hrs Ocean View Hotel, Urunga. Racechew and Registration. OM \$7, XYL \$5, Family \$15. Includes maps and tourist information, all events, morning and afternoon tea, Saturday and Sunday, supper Saturday and Sunday.

Saturday: Urunga opposite Ocean View Hotel. Sunday: Bellingen Show Ground. Coming from Highway turn right at Bellingen Post Office — follow signs.

Car trips have been arranged to local cottage industries for those who are interested. Details will be available at the Registration table.

Trade displays, disposals — bring and sell — lucky registration, amateurs displays, cottage industry displays, quizzes.

7100 MHz-28.5 MHz-146 MHz monitored for talk-in.

Further information can be obtained from the Coffs Harbour Club Net each Monday at 2000 hrs Aust. summer time on 3810 MHz or from Urunga Convention Secretary, Max Francis, Dowle St., Bellingen 2454. ■

BUYING OR SELLING GEAR?

HAMADS

MAKE IT HAPPEN FAST

HELP WITH INTRUDER WATCHING

TRADE HAMADS

For a very long time commercial advertising has not been accepted in AR Hamads, but as the result of discussions at the 1978 Federal Convention a decision was made to open up a "Hamads-Trade" section. The rate will be \$10 for 4 lines plus \$2 per line (or part thereof), minimum charge \$10, prepayable. Copy is required by the first day of the month preceding publication. This will mean that in future ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes. ■

HAMADS

- Eight lines free to all WIA members. \$9 per 3 cm for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHr means address is correct as set out in the WIA 1979 Call Book.

FOR SALE

Kenwood TS120V HF Tcvr, g.c. (working A1), with manual and orig. packing, 4 mths. old, little use, but slightly soiled on sides of cabinet, \$510, ONO. Phil VK3NAY/ZAU. Ph. (03) 221 6591 A.H.

Teletype Model 15 for RTTY, adjusted to 45.45 baud, good working order, \$50; transformer, 240/110V, for above, \$15. VK2NXP. Ph. (02) 521 2837.

BC-348 Rx with P/S, spare valves and manual, \$50; Geloac G-209 Rx, valve repair, dial mechanism perfect, \$50; air variable capacitors, 40-300 pF, 7 kV, brand new, \$20; 6 position rotor 5/W, 13 kV, 20A, compact size, brand new, \$20. John VK2PL. Ph. (02) 522 4865.

Collins Commun. Rx 514J, with manual, full set of spare valves, \$300; Kenwood TR7400A, as new, 35W output, \$350; Chess Challenger 19, unwanted gift, \$299. VK2AVP (ex VK2KNK), QTHR. Ph. (047) 21 4373.

IC551D 6m Tcvr, 100W, IC211, 2m tcvr. 6m 5 el. yagi, IC225 2m tcvr. FM mobile, Hustler vertical 4-BVT, 13.5V 12A, regulated DC, HD supply. Ph. (03) 240 1231 A.H. Ph. (03) 509 8637 Bus.

Hy-Gain 14 AVT Vtrt. Antenna, 10-40m, as new, complete with instruction sheet and SWR, \$50. VK2AT2, QTHR. Ph. (02) 98 7151.

Drake Comm. Rcvr R4A, ham and ten 50W kltz bands. Drake NB, four Drake filters installed, notch filter, exc. selectivity and sensitivity, 1 kHz frequency readout, matching Drake MS-4 comm. speaker, manual, mint cond., \$225. James VK2JO, GPO Box 5076, Sydney 2001, NSW. Ph. (02) 36 7756.

Yaesu FT7, little use, orig. carton, complete, works like a charm, \$350; Drake W-4 meter, 0-200W, a must for every shack, \$40; L. Wade VK2AQM. Tel. (02) 358 3905 A.H.

FT2B 2m Transceiver (rep. 2, 5 and 8 and simplex Ch. 40) and matching FP2 AC power supply, \$160, ONO. M. Evered VK3AVO, QTHR. Ph. (03) 544 4109.

TH3JR Tribander, 6 mths. old, \$120; FT7 tcvr, \$400; FL110 Yaesu linear, \$180; YO301 Yaesu minitorsoer, \$280; IC202 2m SSB tcvr, \$120; Phillips R/C bridge GM441, \$25. VK3CCE, QTHR. Ph. (03) 509 1657 A.H.

Icom IC211 all mode, 2m, Tcvr, very little use, faultless, as new cond. and operation, \$670. VK3SB, QTHR. Ph. (03) 550 3521.

FTDX 400, just re-aligned, good cond., \$350. VK1MP. QTHR.

Complete Station: Yaesu FT101E, good cond., with manual and carton, \$500; Kenwood TR7600 2m tcvr., complete, \$350; RM76 microprocessor, c/w TR7600/765 for keyboard entry of frequencies, scanning, six memories, etc., \$95; SX100 scanning rcvr., 2 mths. old, \$330. Richard Cowles. Ph. (02) 699 9403.

Union 220, \$535; VJ5R 80-10m trap switch, ant., \$90; 4 el. 6m beam, \$40; CS201 coax vert. ant.; Hansen SWR bridge and FS meter, \$20. David VK3ZCR/NKG. Ph. (03) 460 5270 A.H. Ph. (03) 579 9469 Bus.

TCO-10-1300 Oscilloscope, \$190; Yaesu FT7 Tx, \$395; Yaesu FROG with narrow filter and slow motion drive, \$260; 5 "bandit" quad hubs, never used, \$10 ea. Bruce VK5NBA, QTHR. Ph. (087) 64 7455.

Superb Icom 701, brand new, only removed from carton for checking, completely solid state, no tune (broad band design) final, from 160 to 10m, built in dual VFOs, \$120 without 240V power supply/speaker, or \$120 with 1 need the money. Len Shaw VK3NLs. Ph. (03) 60 0421, ext. 2066, Bus.

Flux 400, plus home brew linear, \$400 the lot. Ph. (050) 66 3283 evenings.

Trio JRB50 gen. covr. Rx, 0.55 to 30 MHz and 144 to 148 MHz, breadsided on amateur bands, Q mult. 100 kHz crystal calib. (needs xtal), recently re-aligned, \$125. VK3ZTA, QTHR. Ph. (03) 500 1157.

1958 Army Tcvr A-510, good cond., incl. Morse key, headset, handset, four serials, covers to fit webbing and also carrying case, best offer. Glenn VK4NUX, QTHR.

LAC 95 ATU, built-in SWR/power meter, 0-20-250W, manual, \$150; Heathkit catenna dummy load, 1 kW and oil cable. Will VK3BTO. Ph. (087) 58 5701.

B47 6m FM Tunable Transceiver, ex army, \$25, ONO. VK3YSQ. Ph. (03) 67 4105 Bus.

FT101B, works perfectly, AC, has faulty DC-DC inverter, causes low output, replaced from 12V, very good condition, original packing, \$450, ONO. TR2000, 2m FM portable, Ch. 40, 50, R42, R48, nlcads, original packing, as new condition, \$150 ONO. VK4VU. Ph. (07) 52 7239 Mon-Fri. after 6 p.m.

Yaesu FT301S Tcvr, Yaesu FP301 power supply, Hustler 10/15m V522 Yagi, Emulator 103 LBX rotor and cable; all items in new cond., tcvr has full coverage on 10 and 11m, complete station as above, \$1000. Genuine reason for selling. Kevin Cocks VK3NCP, QTHR. Ph. (051) 52 4632 bus. 'S1' 67 1492 A.H.

Heathkit SB10T Tcvr, up-dated to SB10Z, CW filter, 10 to 80m, like new; Heathkit 540 ext. VFO; Heathkit HP224 240V AC power supply, complete; Heathkit 12V DC power supply for mobile; connecting cables, manuals — \$650 the lot. VK2KDA, QTHR. Ph. (02) 94 1039.

TH6DX Hy-Gain Tri-Band Beam, completely refurbished, new boom section, new SS clamps, antirapex, small elements, brass assembled, aluminium, tapered and sealed, tuned for 4.1-10 MHz, tested, beam to mast assembly etc., \$200. VK2KDA, QTHR. Ph. (02) 94 1039.

Atlas 210X SSB Transceiver with Shure 404C mike, PDA. Icom IC22A VHF transceiver, PDA. Ian VK2AVV. Ph. (02) 653 2341 or (02) 406 5666 ext. 258 bus.

Yaesu Guitermood HF Ant., base, 2m stub, 60m a:d 40m resonators, \$55. VK2DEP, Corimal, N.S.W. Ph. (042) 83 3509.

Yaesu 301D, 160-10m, 200W, PEP, all solid state, digital readout, exc. cond., \$820. Alex VK2NQN, QTHR. Ph. (02) 772 2645.

F1200 Yaesu Tcvr, with FP200 mains power supply, as new, cooling fan, inbuilt audio filter for CW, instruction manual, ZL FT200 club workshop man., \$300. VK3ASMA, QTHR. Ph. (03) 754 4194.

Multi Quartz 16 Transistorised 2m FM Tcvr, 25 ch. capability, xtal inc. rprs. 1 to 8, 40 and 50, complete w. usual extras, \$180. IGL 432 MHz strip-line variable capacitor, 28 MHz filter with Hy-Q xtal, neatly boxed, \$20. VK4Z21, QTHR. Ph. (07) 224 8575 bus.

Kenwood R-598D Comm. Rx, complete with all accessories, 4 select. filters, aux. bands, VHF converters, matching speaker, 240V AC and 12V DC, Kenwood DG-5 dig. display factory installed, can be used as ext. remote VFO for Kenwood CL-60 200 series tcvrs, brand new in factory cartons, \$700 firm. Manfred Meyer, Box 120, Vaucluse, 2030. Ph. (02) 371 8854.

Hygain trapped vtrt. ant. for 10, 15 and 20m, \$50. VK2AXR, QTHR. Ph. (02) 44 1389 after 10.00h.

Yokuto 2m FM Tcvr, synthesised 800 channels, dig. readout, mic., handbook, no mods, exc. cond. \$250. M. Glover VK7MG, Franklin St., Swansea, 7278. Ph. (082) 47 8220.

Yaesu FT301 50W Transceiver, good condition, recent re-alignment, \$450. VK6BD, QTHR. Ph. (09) 294 1591.

FT101B AC-DC Tcvr, 160-10m, SSB-CW-AM, mint cond., little used, complete, \$525. 14A-V60 40-10m vert. ant., complete, good cond., \$45. VK5XY, QTHR. Ph. (08) 74 2350.

Shack Clearance. ICOM 21A/OV21, 2m FM synthesized, digital readout, full scanning and memory facilities plus several fixed channels, full metering, internal AC P/S or 12V DC operation, all as new, \$350. Ken KP12A RF speech processor, \$100. DAIWA RF440 RF speech processor, \$90. Digital freq. counter to 250 MHz, \$100. 40m helical whip, 150. 160m helical whip, \$15. Matching speaker for TS520, \$25. Nicad charger for Ken KP202, new, \$15. Yaesu, QTHR. Ph. (02) 521 2837.

Yaesu FL/FROX400, matching Tx and Rx, good condition, new final tubes, \$500 ONO. VK3ZNC, QTHR. Ph. (051) 47 2368.

Yaesu FL110 Linear Amplifier, brand new in carton, with accessories, \$200 ONO. VK3ZNC, QTHR. Ph. (051) 47 2368.

Yaesu FT-301 100W, power supply SP601, and ext. VFO FV301, complete with 10W link for Novice use, excellent cond., with cartons, \$1,100 firm. VK3NRI, QTHR. Ph. (051) 34 5058.

R11Y Equipment in working condition, Model 15 (c/w Model 14 reparts, and 10s, Model 19 c/w auto CR/LF and downshift on space, also Siemens Tape Teletype punches and reparts, Belcom Satellite UHF tcvr and sundry gear. Reasonable offers accepted. VK3ZN, QTHR. Ph. (12) 76 9547.

Ken KP202 handheld 2m FM Tcvr, ch. 2, 4, 6, 8, simplex 40 and 50, exc. cond., c/w charger, cables, helical and 1/4 wave whip plus PL159 adapter, all only \$111. VK3M, Ph. (03) 528 6602 bus.

Yaesu F301W/FP200 (black front panel), plastic cover still attached, good working order, some mods., handbook, \$350. VK2ABC, QTHR. Ph. (02) 451 1213.

2 sockets suit 40x150 and 40x250 Sers. SK600, \$20 each. Comm. Rx. Drake SP4A (160-10m) 0.15-30 MHz, NB fitted all 23kts vry good wkg. order, opt. state 12V DC plus 240V mains, \$450. ONO. VK2KDA, QTHR.

TS520 Tcvr with digital display (needs small replacement mic. vry tall in orig. cartons), \$650. Alex IC225 2m FM Tcvr, digital supply, mounting bracket, whips, \$230. Selling for financial reasons. Simon VK3JZX, 322 The Boulevard, City Beach, WA 6015.

Radio Tower, triangular self-supporting 2 section, height 48 ft., 60 ft. with 2 inch tubing, base size 4 ft. triangle, top section (23 ft.) hinges over, maintenance platform at the top, completely rust proofed and galvanneal, fitted with commercial heavy duty bearing thrust race, rotator and 140 lb. of rotor cable, dismantled & ready for transport, \$450. David Rosenfield VK3ADM, QTHR. Ph. (03) 592 2168 after 5 p.m.

FT211, complete with YC221 digital freq. display, very good condition, \$700. VK2K1, QTHR. Ph. (02) 78 4237.

FT211B, 160-10m, 500W, PEP, also spare set of cables, \$450. 160-2200 2m FM port. ch. 1-6 rprs., ch. 40, 50, 51 simplex, new nlcads, \$210. Atlas 215 160-10m inc. mobile cradle, AC PS, fixed xtal osc, dig. readout, \$555. Video cassette reader JVC VHS syst., 6 months old, \$950. Also \$300 worth cassettes for \$100. All prices ONO, will freight free. VK3BEJ, QTHR. Ph. (050) 24 5814.

FRG-7, switched SSB filter in addition to normal filter, 28 MHz filter, 28 MHz filter, 28 MHz antenna coupled transmatch type 500W PEP, \$75. Roy VK3XY, QTHR. Ph. (03) 557 1265.

WANTED

Urgently, Model 15 Teleprinter, am willing to pay up to about \$50 for machine in fairly good condition to speed 45.45 bauds, teleprinter transformer also needed. T. Robinson L31105, QTHR.

Morse Keyboard, Aercom or similar, with memory. VK3AE, QTHR. Ph. (03) 211 7965 A.H.

Mod Bemo Unit and power supply for model 15 teletype. VK8BE, QTHR. Ph. (059) 85 4664.

Two 688G Valves and two 524s. Price, etc., to VK4NUY, 14 Cooradilla Street, Jindalee 4074.

Help! Urgently need circuit for PSU/batt. charger type PP6245 (032V, 0-60A, General Dynamics). Also, amplifier type 1925/1926 for Synestron-Donner counter type 1034. "Deltaheh" valve or transistor Rx built, broken or in bits (will consider other -30 MHz Rx). Please write VK3ANC, QTHR, will defray all costs.

Radio and Hobbies, May 1939 (Vol. 1, No. 2), August 1940 (Vol. 2, No. 5), November 1940 (Vol. 2, No. 8), Jim Gordon, 6 Graeme Ave., Ringwood, Vic. 3134. Ph. (03) 870 1745.

Yaesu FT221R 2m all mode tcvr, good condition, also IC22A, TR7100 or FT 2m mobile, will pay current market price. Details for 6m conversion of Cybernet CB rig. Jeff VK8GF, QTHR. Ph. (089) 52 2967.

Service Manual for R5223 Rx, made by TCA for Australian Army. Lionel L. Sharp VK4NS, QTHR. Ph. (07) 59 1945.

Icom IC3P5 Power Supply to suit Icom 202E and linear, will exchange brand new IC3P5 supply which matches IC2S5. Bill Jamieson VK3ZXX, QTHR. Ph. (03) 277 9172.

Home for Memorabilia Items free to collector — Kingsley Radio Type K/S9 signal booster with 14 and 28 MHz coils, and KF/C5 tuneable 50 to 54 MHz converter, both as advertised AR 1947/48. Roy VK3XY, QTHR. Ph. (03) 557 1265.

Headphones, early Brown's type, adjustable diaphragms. Details to VK2KI, QTHR. Ph. (02) 78 4237. Yaesu FT201 Xcvr (not FT200), top price paid, or exchange FT101. Details to VK3OM, QTHR. Ph. (03) 580 9215.

Scld State High-Band Commercial Transceiver, suit conversion to 2m repeater, to 308 solid state UV transceivers, suit conversion to 438 MHz for repeater control, good money for good gear. VK2ADZ, QTHR. Ph. (069) 62 3718.

Automatic Keyer. Send details and price to VK2AYR, QTHR. Ph. (02) 44 1389 after 18.00h.

WANTED KNOWN

OSI Superboard 2 or CIP users interested in swapping programs and/or information contact Frank VK4AYE on 21.175 at 2330 GMT (Sunday a.m. local time after the VK4 WIA news), or on 14.133 MHz at 0030 GMT.

TRADE HANADS

High Gain Beams for 40, 20, 15, 10, 6, 2 and 70 cm, also UHF CB and ATV repeaters. SRJ frequency counters and kits, Mirage PWR/SWR meters, also 2m amps with preamp. Write ATN Antennas, Box 80, Birchop 3483, for catalogue.

ETO ALPHA high power 1-30 MHz linear power amplifiers in stock now, model 76APE with 3 Elnac 8874 tubes, manual tuning, heavy duty power supply, \$2,195; model 37AAE, 2 Elnac 8874 tubes, no tune up, and manual tune if required, \$2,395; export versions all feature 10 meters factory installed; Eto Alpha appointed sole Australian importer and distributor; after sales service, James Goodger VK2JO, Australian Sound and Signal Research, GPO Box 5078, Sydney 2051, NSW. Ph. (02) 389 0428, 389 7786; A.H. (02) 35 7758.

A REMINDER

A WIA MEMBERSHIP CERTIFICATE
IS OBTAINABLE ONLY FROM YOUR
DIVISION.

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. A. C. LORD
Mr. R. G. J. HORNE
Mr. A. J. WARD
Mr. W. S. LANE
Mr. K. J. COLLINS
Mr. K. W. HELEY
Mr. T. WOODFORTH
Mr. BEN WALLICH
Mr. A. G. MARKS
Mr. A. M. MCGREGOR

VK3BE
VK3BLH
VK3VH
VK2LY
VK2ARY
VK5ZKW
LS0480
ex G6BW
VK3NVG
VK4KX

OBITUARY

RONALD HORNE

VK3BLH

Ron Horne, of Maryborough, Victoria, suffered a fatal heart attack on 4th December, 1979. He was previously VK3AGR and VK4RR, and was a well known former member of No. 3 Squadron, RAAF. At the time of his demise he was 51 years of age.

From "Bill" Holland VK3XC.

HAROLD BOAST

VK3AX

With the passing of VK3AX (AR Oct.) the ranks of real old-timers thin further. Licensed before the issue of the VK prefix, Harold lived at Frankston as a youngster and was one of 3DB's pioneers. The station opened its country relay at 3LK, Lubeck, in 1936 and Harold moved there shortly afterwards becoming Chief Technician — a post he held continuously until his retirement. He was a keen 3LKer and recall what a showplace it used to be, the station and equipment positively gleaming, with the surrounding gardens and lawns neatly kept, a tribute to Harold's management and a great deal of personal effort. Harold and his XYL, Maudie, were deeply involved in district sporting and community affairs, tennis being their favourite sport, at which they both excelled. Harold was an A1 CW op., his main interest being 20m, a band from which he rarely strayed. With his trusty BC348, home brew Tx and 150 ft. near vertical antenna, his patient and methodical approach netted a formidable DXCC tally which I doubt he ever claimed. Harold and Maudie retired to Frankston in 1972, unfortunately illness overtook him in early 1979 and he passed away last July, just a few weeks after the last time I spoke with him. Sadly I reflect to what extent my own links with the past in radio both amateur and professional have now been severed. Deepest sympathy is extended to his wife, Maudie, and son Roger and family.

Chas. Hawker VK3JB.

ANDREW CHARLES LORD

VK3BE

It is with deep regret we record the passing of Andrew Charles Lord (Andy) VK3BE after a long illness. Andy was first licensed on the 26th October, 1938, and was a very active ham on most bands. He served in the AIF as Lieutenant during World War 2. His occupation was firstly with the Ballarat City Council as a rates collector officer and later resigned this position to take his final position as Shire Secretary of the Buninyong Shire. His health forced his retirement earlier than anticipated. Andy will be missed not only by amateurs but people in many walks of life. Deepest sympathy is extended to his sister, Winifred, and brother-in-law, Bert, and other members of the family.

Stanley E. Widgery VK3SE.

SAM LANE

VK2LY

The death occurred on 20.12.79 of Sam Lane VK2LY after a short illness. Until taken ill, Sam was an employee of Tamworth Base Hospital, starting work there as a tradesman in early 1942. Soon after he joined the RAAF as a Wireless Air Gunner and served in Australia and overseas. On demobilisation he returned to his former employment, finally becoming Hospital Engineer and later Regional Engineer. To his wife Joan, son Alan and daughter Sam, also his mother, I am sure all amateurs extend their heartfelt sympathy in their great loss.

G. H. Simpson VK2WY

TOM SCOTT

VK2NPK

It is with deep regret that I record the passing to Tom Scott VK2NPK on the 28th November 1979. Since serving with the Signal Division in New Guinea in WW II Tom maintained an interest in electronics. At the age of 58 he gained his Novice licence. He was not only an active operator but was a person who was committed to helping others obtain their Amateur licences. He was a tireless worker for YRS Education Service personally packing and despatching over a thousand Novice Study Kits. He was an outstanding example of a person who put back into Amateur Radio something in return for the fulfillment he gained from it. His efforts and his warm and generous personality will be sadly missed by all those associated with him.

Dave Wilson VK2ZCA/MMW

ARNOLD GILBERT MARKS

VK3NVG

It is with deep regret that I inform you of the passing of a great friend in Gil Marks who passed away on December 24th with microphone in hand.

Gil spent all his life in radio and TV servicing. He was a radar operator in the RAAF during World War 2. He operated a business for many years in Portland and shifted to Geelong where he formed the Geelong Radio Club. He was extremely popular with all he met and highly respected by all for his electronics knowledge and friendly bearing.

He will be sadly missed and I wish to convey to his wife, daughter and son on behalf of all his friends our deepest sympathy. The last entry in his log book was: "Jack said he has not received his results as yet". (I received the result on Dec. 27th — VK3NVG).

John E. C. (Jack) Heaner

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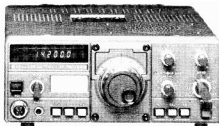
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